

Idea for the Frontispiece of a Public Building in England.

C. R. Cockerell, fecit 1843.

THE WORK OF PROFESSOR COCKERELL, R.A.

By J. M. BRYDON, *Vice-President.*

Read before the Royal Institute of British Architects, Monday, 21st May 1900.

THE subject of our appreciation this evening forms, so to speak, a connecting link between the old order and the new. Born towards the end of the eighteenth century, Cockerell came when the men and the methods of the Renaissance were gradually being worked out. Chambers, the last of the notables, died when Cockerell was only eight years of age; Robert Adam, the most famous of the well-known brothers, some four years before that event. Under the latter English classic had become somewhat emaciated, and though Chambers still upheld the principles of the Renaissance as understood and practised in its best days, yet it was manifest the letter of its tradition was being neglected, if not altogether lost sight of.

With the close of the century a change came over the spirit as well as the letter of classical work in England. Whatever may have been the faults of the English Renaissance School from Inigo Jones to Chambers, it at least did not attempt to hide its buildings behind pseudo-classic fronts, or palm off Greek and Roman temples for Christian churches. Its use of classic details was always subservient to the purposes of its buildings, and its buildings to the requirements of the time in which they were built. No one, for instance, could possibly mistake St. Paul's for a Roman temple, or Somerset House for the palace of the Cæsars, and thus it was throughout the two hundred years of the Renaissance; but with the beginning of the century now fast drawing to a close other methods came into practice. For example, as Fergusson says, "the architect failed in his endeavours if you are able to detect in St. George's Hall, at Liverpool, any feature which would lead you to suppose the building might not belong to the age of Augustus," and "the architects of the Renaissance had a distinct principle before them, which was how to adapt classical details so as to make them subservient to modern purposes. To do this always required thought and invention on their part, more, in fact, than they could frequently supply. If the Revival architects had a principle it was that modern purposes should be made subservient to foregone architectural styles." It is necessary to bear this distinction in mind if we would fully appreciate the efforts made by such men as Cockerell and Barry towards the elucidation of the true principles of design, for after all, as I need hardly say, archæology is not architecture.

Many causes contributed to bring about this result, chief among them being the publication of Adam's *Spalatro*, Taylor and Cresy's *Rome*, and Stuart and Revett's *Athens*, which

was continued by the Dilettanti Society, and ultimately completed by a work on the *Researches at Ægina and Bassæ*, by Cockerell himself. Hardly of less influence also were the studies of Greek and Roman antiquities on the spot, more especially the former, which were considered so essential a factor in the training of the early nineteenth-century architect; hence the rise of what perhaps I may be allowed to call the scholars of the profession—men who were familiar from personal study with the principles and practice of the architects of the great ages of Greece and Rome. Fergusson calls them “Revivalists,” or the architects of the Revival as distinguished from those of the Renaissance. I am quite willing to accept the term; it sufficiently explains the root of the distinction between the men of the two schools. As to results, one at least became very marked indeed—namely, the adoption of Greek models and Greek detail almost to the exclusion, for a time at least, of those of the Renaissance. Inasmuch as this constrained men to think more of proportion and give greater study to delicacy and refinement of detail, it must be held to have been of distinct advantage to the Revivalists, but, like all such imitative work, it carried within itself the seeds of its own decay; and even had it been entirely successful—which it was not—the aim can hardly be said to be a very lofty one, or at all worthy the mother of all the arts.

It will not surprise us, therefore, to find that men like Barry and Cockerell soon perceived the “hopelessness,” as Fergusson calls it, of the path the Revivalists were pursuing, and each for himself began to follow the bent of his own genius, the former reverting to the Italian of the Renaissance, the latter carrying his Greek culture and refinement into the everyday work of his time.

When we come to the personalities of the time we find that Cockerell formed one of a galaxy of notable men—Sir John Soane, Sir Robert Smirke, Wilkins, Basevi, Elmes, Playfair, Sir Chas. Barry, Pennethorne, Penrose, and others, all more or less true to the old classical school of art. Their work was distinguished by a sense of scholarship and distinction of style, only too sadly lacking in some of their latter-day followers. Their respect for and knowledge of architectural tradition made the solecisms of our strivers after originality impossible, while offences against good taste were comparatively few. Of the men whose names I have mentioned perhaps no one had a stronger grasp of Greek detail, or used it with more sympathetic expression, than Playfair; and none a deeper knowledge of the principles of Italian art than Barry; but in Cockerell we have a master who, at once a great artist and a scholar, drew his inspiration from both sources, combining the adaptability of the Italian with the refinement and grace of the Greek, while through it all runs the impress of the individuality of the man himself, without which no great art was ever generated.

But if we would appreciate the architectural atmosphere of Cockerell's time there is another element which should not be forgotten. He lived in a time not only of one revival but of two. The Battle of the Styles was in full swing. The competition for the Houses of Parliament had given an impetus to the revival of mediævalism, so that no sooner did Greek seem to be in possession of the field than Gothic was ready to contend for the mastery. The elder Pugin thundered his anathemas against Classic architecture, and propounded his “Contrasts” to such purpose that there was a notable band of men devoted to the so-called “National” style ready to do battle at all times on its behalf, so much so that as early as 1820 we find two churches—St. Pancras', Euston Square, and St. Luke's, Chelsea—rivals in style, though erected simultaneously. Even the classic mind of Cockerell himself was not altogether proof against the mediæval influence, for at Harrow Schools and Chapel and Lampeter College we find him trying his hand at Gothic, this even before the time of the Houses of Parliament competition, and when his mind was occupied with the restoration of the Roman Forum, the Parthenon at Athens, and the much more congenial work of designing Hanover Chapel, in Regent Street.

A propos of the rival schools, the story is told of how Stanfield the painter, being anxious to introduce Cockerell and Pugin, did so one day, and left the two to have a chat together. Afterwards he asked each of them what he thought of the other. Cockerell said, "Pugin is the most earnest and enthusiastic man in his profession, and has the greatest belief in it of anyone I have ever met." And Pugin said of Cockerell, "The man is a great artist, though I don't believe in the style he works in."

I am not, however, concerned this evening with the progress of the Gothic revival, or even for the matter of that with the Classical revival, and only call attention to it as an element, and that an important one, in the architectural life of the time in which the subject of my paper lived and worked. It is necessary to bear in mind the dual development on which I have touched when endeavouring to estimate the value of the influences at work during his career. Few of the men of his school altogether escaped the mediæval fever, and fewer still the pseudo-classic of the Revivalists, while all through the years ran the bitter strife of Goth and Greek, to culminate in the designs for the Government Offices in the great competition in 1857. The result of the latter was typical of the ding-dong of party warfare. Won by a Classic design, the decision was overturned in favour of a Gothic building, to be reversed again in its turn by the will of an imperious Cabinet Minister—final result, Sir Gilbert Scott's Home and Foreign Offices as we see them to-day in Whitehall. Into the merits of such a proceeding it is not, of course, my purpose to enter, but one can imagine the chaotic state of things then existing, and the war of pens and pencils that must have raged around generally, the upshot of the Government Office competition adding but fuel to the flames.

Before noticing his works a few biographical notes may be interesting, for the details of which I am principally indebted to the "Account of the Professional Life and Character of the late Professor Cockerell, R.A.," by Sydney Smirke, in the *TRANSACTIONS* 1863-64, and to a paper by Professor Aitchison, R.A., published in the *TRANSACTIONS* 1889-90.

The former was read at the ordinary general meeting of the Institute on November 16th 1863, two months after Cockerell's death, and was illustrated by a large number of his drawings exhibited in the room. The latter, not having been read at a Sessional Meeting, may have escaped some of the notice it so much deserves. Both were written by personal friends of the master, Professor Aitchison happily describing himself as "one who (as a student) sat at his feet," and yet I am afraid that to many of the present generation of architects, and more especially to the younger of them, his name is little more than known, and his works hardly at all.

Charles Robert Cockerell was born in 1788, and was the second son of Samuel Pepys Cockerell, himself a well-known architect, and surveyor to the East India Company. Part of his education was received at Westminster, and the great school ought to be proud of its pupil. His professional training was begun in his father's office, where he remained for four or five years, afterwards entering Sir Robert Smirke's office as an assistant. At this time Smirke was erecting Covent Garden Theatre, the predecessor of the present well-known Opera House.

By this time he was a splendid draughtsman, and his father being anxious he should begin his foreign studies, in April 1810, when in his twenty-second year, he started—as Professor Aitchison tells us—from Plymouth on a 12-gun lugger, the "Black Joke." It was an eventful voyage. His vessel captured a prize, met with French privateers in the Bay of Biscay, ran into Cadiz to deliver despatches for the British fleet, and finally landed him at Constantinople; thence he proceeded by way of the Troad and Salonica to Athens, where his accomplished mind and agreeable manners brought him many friends and ardent fellow

labourers, whose names became familiar at the time to all engaged in the study of classical antiquities. Here he must have come under the spell of Greek art, which never afterwards left him. He twice thoroughly explored the mainland of Greece and its islands, returning again and again to Athens. Then he visited Sicily, and from there passed to Italy, staying at Naples, Florence, and Rome. At the latter he made many friends, whom he retained all through his life, amongst others Ingres, the great French painter, who made a beautiful portrait of him in pencil, reproduced in Vol. VI. N.S. of our TRANSACTIONS. On his way home from Italy he spent some time in Paris, and finally returned to England after many adventures which in these more prosaic days read like a romance, and an absence of seven or eight years, four of which were spent in Greece. He studied incessantly, made notes and sketches and restorations, many explorations of temples and other buildings and particularly of Greek sculpture, and generally stored his mind with the knowledge he afterwards gave to the world in his famous lectures and books and still more famous works. His energy was untiring, his enthusiasm unbounded, no hardship or discomfort keeping him away from anything worth visiting. As a consequence he became an authority on Greek archæology, his skill and knowledge making his restorations of Greek buildings as valuable as they are beautiful. He returned home with a great reputation to receive the applause and congratulations of his many friends, to work out the results of his antiquarian researches, to assist in arranging the sculpture in the British Museum, and to begin under the happiest auspices his architectural career.

Cockerell had tried his "prentice hand" at design in Italy the year before his return home, having prepared plans and elevations for a palace for the great Duke of Wellington, an ambitious beginning, like some other ambitions never destined to be realised; but at the age of thirty we find him beginning his first real work, the Literary and Philosophical Institution, now the Freemasons' Hall, at Bristol, a design in which he had to contend with a difficult site and very limited means, but which notwithstanding is marked by that sense of proportion and purity of detail which afterwards became such marked characteristics of his later works. After some additions to Harrow School and Bowood for Lord Lansdowne we come to his first work of primary importance, Hanover Chapel, in Regent Street. The formation of Regent Street, in itself a grand idea, was somewhat disappointing from a purely architectural point of view; the one redeeming feature, which lent an air of distinction to its northern end, was Hanover Chapel. In this work Cockerell distinguished himself at once by his originality of plan, design, and refinement and delicacy of detail, though hampered by the eccle-



FIG. 1.—HANOVER CHAPEL.
From a Sketch by Mr. H. W. Brewer.

siastical tradition that the altar must stand at the east end of the church, a condition which forced him to enter his building, so to speak, at the wrong end, by the necessity of providing for more people than could conveniently be accommodated on the site, a condition which forced him to burden the interior with two galleries one above the other, by the fact



FIG. 2.—HANOVER CHAPEL, REGENT STREET, NOW DEMOLISHED. C. R. COCKERELL, ARCHITECT.

that the street houses abutted against the church on either side, and so left him only one front for any kind of architectural treatment. Though hampered by all these drawbacks, the result was an artistic triumph for the architect, who produced a scholarly building of great dignity and beauty both externally and internally. He paid the utmost attention to every

detail; in design it was a veritable revelation in the adaptability of Greek art to modern purposes, not a mere reproduction of the temple form. It attracted much attention at the time, and admiration from that day to this. Alas that, to the shame of all concerned in the transaction, the craving after ground-rents should, in these latter days, have become so powerful as to sweep it all into oblivion! Poor Cockerell, much of his work has been tampered with, some of it altered almost out of recognition, but none of it ever so unkindly treated as Hanover Chapel. We have lost the work of a great master of our craft, and in its place reigns an emporium of trade. 'Tis said that "nothing is sacred to a sapper;" after this we may well add, "or to a speculator."

Hardly was Hanover Chapel completed than there came to Cockerell a commission that must have been very dear to his heart; this was neither more nor less than a reproduction of the Parthenon, and of the same size—namely, the National Monument on the Calton Hill, Edinburgh, a work in which he was associated with Playfair of Edinburgh—the Scottish Cockerell, if I may be allowed to call him so. The two were congenial spirits, and to each his share in this noble Valhalla must have been a labour of love. But again an unkind fate stepped in to snatch away the glory of completion; again "vaulting ambition o'erleaped itself," and the monument to-day looks more like the ghost of the Parthenon than that is the reality of the Parthenon that was. Nevertheless the spirit of the great Greek Temple is there in the fragment on the Scottish hill; its exquisite proportion, its beauty of detail, show how true was the architects' appreciation of Athena's majestic shrine. They were fortunate also in the magnificent stone in which it is worked: as sharp and clean as on the day it was set up, it shines in the clear air and the northern sunlight like a veritable production from Pentelicus itself.

Cockerell's practice went on increasing; after the manner of young aspirants for architectural honours, then as now, he engaged with more or less success in several competitions, amongst others for the Cambridge University Library and Museum. As a competition it partially failed and had to be done all over again. It was a limited contest, the competitors being Cockerell, Wilkins, Decimus Burton, and Messrs. Rickman and Hutchinson. In a note attached to the list of his drawings exhibited at the Institute in November 1863, and published in the *TRANSACTIONS*, we are told that Cockerell's design was highly approved, but in consequence of his departure from the conditions laid down in the programme which fixed the axis of the proposed building Messrs. Rickman and Hutchinson's design was chosen. Cockerell, it is true, did partly make a design on the required lines, but in his more finished design he took advantage of the width of the site and filled the ground so as to get the quadrangle nearly 100 feet square, instead of 100 feet by 60 feet, as the conditions made it. As we can quite understand, this gave rise to many criticisms on Mr. Cockerell's and Mr. Rickman's designs, and a number of pamphlets were published setting forth their comparative merits. In the end the same parties were invited to compete again, though in the interval the Theatre required in the first competition had been executed in another part of the University; it was therefore not required in the final competition. As a result Cockerell's design was chosen, but the north wing only, as we now see it, was proceeded with. Read between the lines all this sounds most unsatisfactory; doubtless there was much heart-burning over the affair at the time. Decimus Burton and Wilkins seem to have been out of the running, and no doubt their views thereon would be instructive; as it is, Cockerell's design was never fully carried out, so that the whole thing must have been a comparative failure, which is the more to be regretted if one may judge by the portion actually done. During the "goings on" at Cambridge, however, he was engaged on the Westminster Insurance Office, now the office of the *British Medical Journal*, in the Strand. This was the first of a notable series of buildings for commercial purposes which perhaps more than any

others show the individuality of the man. It has all the characteristics we come to recognise as typical of its designer, and which were developed with such striking success in the Sun Fire Office in the City, and the Liverpool and London Insurance Buildings in Liverpool: the decorative use of the order—with an attic over it—round-headed windows with little iron balconies set on their cills; the peculiar treatment of the gabled front towards the street, worked out with so much effect afterwards in the Bank of England at Liverpool. The whole



FIG. 3.—LIVERPOOL AND LONDON INSURANCE BUILDINGS, LIVERPOOL. C. R. COCKERELL, ARCHITECT.

was permeated with that wonderful sense of proportion, that distinction of style and Greek elegance of detail which Cockerell made peculiarly his own; while seeking his inspiration from Greece rather than from Italy, while clothing all with the mantle of Greek refinement rather than with the luxury of the Renaissance, he never forgot he was designing buildings for modern purposes, nor to show how pliable was the style he made his own.

Another matter on which he bestowed much study was the masonry of his façades. The size and proportions of the stones were made to play a subtle part in the harmony of the general design. He seems to have been fond of big stones, if one may judge from examples in Hanover Chapel and the Taylor building at Oxford; but apart from mere size his angle quoins

and rusticated courses are most cunningly devised to assist the general scale and expression of his elevations. The importance of such a point I need hardly enlarge upon, but as just at



From a Photo. by Bedford Lemere & Co.

FIG. 4.—BANK OF ENGLAND, LIVERPOOL. C. B. COCKERELL, ARCHITECT.

present there seems to be a sort of efflorescence of rustication in latter-day architecture, permit me to commend to the heedless of such matters a careful study of the fronts of the Sun

Fire Office, or the Insurance Buildings in Liverpool, where they will see how these features may be used with reticence but with power.

These commercial buildings are worthy the attention of all students, more particularly the Insurance Building at Liverpool; in this the Dale Street front is one of the finest pieces of design in modern classic, and the staircases in the flank towards the Exchange are probably



FIG. 5.—SUN FIRE OFFICE, THREADNEEDLE STREET, PREVIOUS TO RECENT ALTERATIONS. C. R. COCKERELL, ARCHT. T.

among the most interesting examples of the adaptability of the style to be found anywhere. Dearly as Cockerell loved Greek he was never its slave, but fashioned it to his purpose with the hand and eye of a master. In this connection it is to be for ever regretted that his work at the Sun Fire Office in the City has been tampered with to the extent it has. One must recognise that as the business of an office increases the premises must also increase with it;

one must also recognise the great difficulty the task of the alteration of such a building must have been; but surely this might have been accomplished with a little more regard for the work of such an artist as Cockerell. The whole of the proportions of the building have been altered, instead of leaving the original work alone, to speak for itself, and designing the addition in harmony with it. It may be urged that necessity required the accommodation of an extra story in the height; truly—but was it not possible to effect this without the mutilation of the whole design? One may be thankful now that we have the Dale Street front of the Liverpool building, recalling the vanished motive of the Sun Fire Office. Built



FIG. 6. THE TAYLOR AND RANDOLPH BUILDINGS, OXFORD: SOUTH-WEST VIEW. C. R. COCKERELL, ARCHITECT

during the last decade of his life, this beautiful and artistic building is, with another I shall notice presently, the work he will be best remembered by, and worthy monuments they both are of his skill and genius.

The other work I refer to, the Taylor and Randolph buildings at Oxford, won in a competition, was carried out by Cockerell during the years 1841–1846. It has the advantage of a fine open site, with the main front in the form of the letter E. In the centre is a beautiful Ionic portico connected by galleries of moderate height to loftier wings at each end. The return flank of the east wing facing St. Giles's becomes a front of great importance and is adorned with excellent sculptured figures. The Ionic order of the portico, the principal feature of the semi-quad-like front, becomes purely decorative in the wings, which are crowned with an upper story and main cornice in Cockerell's most characteristic manner. Personally I regret that he seems to have felt the necessity of cutting the main cornice of the order in the wings, presumably on purpose to get lofty windows to the libraries therein; to me the treatment

seems to disturb the repose of an otherwise almost perfect composition, a veritable architectural gem, in every way worthy of the great University town, and to my thinking artistically superior to anything that has been done there since. We must remember this was in the early forties, when the Gothic revival was gathering force every year, so that we cannot but admire the courage of the man, and his belief in his "style," as Pugin called it, when we find him sending down to Mediæval Oxford, of all places in the world, a design so essentially Greek, and which must in some quarters have been deemed so out of sympathy with all the local architectural traditions; and yet the result justified not only his courage but his faith. It bespeaks the artist and the scholar in every line, and proclaims him a consummate master



FIG. 7.—THE TAYLOR AND RANDOLPH BUILDINGS, OXFORD; SOUTH-EAST VIEW. C. R. COCKERELL, ARCHITECT.

of his craft. Though not a large building as public buildings go, it has a quiet dignity which is beyond praise, enabling it to hold its own in a city renowned for its architectural monuments. We see in it the work of its architect at his very best. We feel all the grace of its Greek refinement both in proportion and in detail, the appropriateness of its sculpture and carving, the judicious contrast of plain surface and richness of effect, with all the wealth of knowledge and skill, and yet that reticence of design which goes to make an architectural work of the highest merit. Again, as in his commercial offices, this Taylor building is no mere copy of Greek features doing duty for lack of originality, but, on the contrary, it demonstrates once more the adaptability of the style to the purposes of modern requirements.

Besides works solely his own Cockerell was called upon to complete two public buildings of the first importance left unfinished at the death of their architects. The first was the FitzWilliam Museum at Cambridge, of which Basevi was the architect. At the time of his death in 1845 the exterior was finished, the internal work hardly begun. Cockerell completed

the hall and staircase, and much of the detail of the galleries is from his hands. The entrance hall was afterwards remodelled by Mr. E. M. Barry, and so comparatively little of Cockerell's work remains there now; but we can still tell where the one leaves off and the other begins.

The second building is St. George's Hall, at Liverpool, the noblest monument of the Classic revival in England. It was designed, as you know, by the younger Elmes, and commenced when he was only twenty-seven years of age. It was a stupendous undertaking for a young man who had had no experience of work on such a scale, so that it is little wonder that the consequent labour and anxiety, added to indifferent health, should in the end have told on his constitution. The strain becoming too great, it became necessary to try what wintering out of England could do for him. Alas! it was too late. He died in Jamaica towards the end of 1847.

The building had been in progress about six years; the shell only was completed, and all the internal finishing remained to be carried out. Elmes had more than once consulted Cockerell during the progress of the work, and had even nominated him to look after it during his visit to Jamaica; what more natural, therefore, than that he should succeed him as architect? It was a choice honourable alike to the memory of Elmes and to the Corporation of Liverpool. Cockerell was probably the one man in England at the time who could have carried the noble building to such a successful conclusion. Roughly speaking we may consider the whole of the interior finishings and the sculpture in the south portico to be his work. With regard to the latter, it appears that the subject was suggested by Elmes in 1843 and designed by Cockerell. To describe the interior of this splendid building would take a paper to itself. Suffice it to mention that Cockerell, rising to the greatness of the opportunity, gave of his best to the service of the work. The magnificent decorations of the great hall, the stateliness of the courts, the Doric beauty of the northern entrance hall, and the elegance of the circular concert room on the first floor are all due to his genius. For nearly seven years he laboured at the work, with the result that the Law Courts were opened in December 1851 and the whole building completed and formally opened in September 1854. Nothing could have been more fortunate in the circumstances than that the services of two such men as Elmes and Cockerell should have been available for the building and completion of one of the most splendid structures in Europe. The elder man, doubtless delighted to find his young friend such a faithful disciple of Greek art, carried on the style so ably begun externally, and finally gave us an interior of the highest artistic value.

That it has its faults, particularly in the means of access to the great hall itself, is not to be denied; but, as Sir James Picton, himself no mean critic, says in his description of the building, "with all its defects, St. George's Hall constitutes not only the architectural glory of Liverpool, but is one of the greatest triumphs of art in modern times;" and Fergusson speaks of it as producing "an effect of grandeur unequalled by any other modern building known," and as "the culminating and by far the most successful specimen of this style of art in England, and perhaps in Europe." This was written before the completion of the Opera House in Paris or the Law Courts at Brussels, but I venture to think that for grandeur of conception, beauty of proportion, and purity of detail the English example can give its French and Belgian rivals many points and hold its own in the end, notwithstanding the cost of each of the latter was four times that of St. George's Hall.

But if this and the other works I have been noticing were triumphs for the art of Professor Cockerell, he had his disappointments, like other men, specially architects. He took part in at least half a dozen important competitions in which he was unsuccessful. Taking them in the order of time they were University College, Gower Street; the Duke

of York's Column; the New Houses of Parliament; the Reform Club; the Royal Exchange; and the Carlton Club; and among his unexecuted designs were Falkland Palace, for Mr. Bruce, and sketches, made at the desire of the late Prince Consort, for the South Kensington Museum.

The beautiful perspective of his design for the Royal Exchange, drawn by himself, and his design for the Houses of Parliament are now the property of the Royal Institute, having been courteously presented by his son, Mr. S. P. Cockerell. In the Houses of Parliament it is interesting to observe how his classical proclivities struggle through the stipulated condition that the building should be of Gothic or Elizabethan architecture, and we have the somewhat curious combination shown in his drawings. For all its merit, however, one is bound to admit that neither in grasp of the subject nor in plan or elevation did he approach within measurable distance of Sir Charles Barry's magnificent structure. As to the Royal Exchange, it is pleasant to recall the words of Sir William (then Mr.) Tite, the successful competitor. In speaking of Cockerell's design he said "it was a design with four towers, drawn by Mr. Cockerell's own hand in pen-and-ink in the style of Piranesi, and of great power and effect," and that considered "as a work of art in connection with architecture it was one of the most remarkable he had ever known"—a noble tribute from one of the competitors to another.

In this connection also it is interesting to remember the collaboration of these two men in carrying out the London and Westminster Bank in the City. We have the story from Tite himself, and it is this: The directors of the Bank wished to build new premises, but did not desire a competition in the ordinary sense. At the same time both Tite and Cockerell had excellent friends on the direction who were desirous that their friend should be appointed architect; so there were in truth two architects in competition. Tite thought this an unworthy strife for the two to be engaged in, and proposed to Cockerell that they should act as joint architects, and so put an end to the contest. Cockerell replied that it would give him the greatest satisfaction to do so, and the arrangement was readily adopted by the directors. The building proceeded, and in the end they were complimented by the Board for the manner in which it had been carried out. Sir William further tells us that the exterior was marked by Mr. Cockerell's hand, the interior was more particularly his (Tite's), and, though the latter had since been much changed, the characteristic style of the architecture of the exterior has been preserved in all the extensions of the Bank. That was an incident of professional life alike honourable to both men, and I am glad to have the opportunity of bringing it to your notice this evening.

Cockerell was a many-sided man, and his work was many-sided as well. Besides being an accomplished architect and a brilliant draughtsman he was a learned archæologist and much of a sculptor. Indeed, as to this last it becomes a moot point as to whether, if he had not been an architect, he might not have become a sculptor. In his researches abroad, in his relaxations at home, he studied this subject more than most men of his time, especially in its relation to architecture. To his energy we owe the discovery of the Egina and Bassæ marbles, the story of which, had I time to tell it, is one of the most interesting in his career. His dissertation on and restoration of the arrangement of the Niobe group, in which he contended they were pedimental sculptures, created much discussion, and, if a mere architect may be allowed an opinion thereon, a discussion which did little to weaken the strength of his theory. He demonstrated the proper purpose and position of the colossal statues at the Temple of Jupiter Olympius at Agrigentum, proving them to be caryatides forming an upper order or attic in the interior and supporting the main timbers of the roof, as set forth in the supplemental volume of Stuart and Revett's work.

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The second building is St. George's Hall, at Liverpool, the noblest monument of the Classic revival in England. It was designed, as you know, by the younger Elmes, and commenced when he was only twenty-seven years of age. It was a stupendous undertaking for a young man who had had no experience of work on such a scale, so that it is little wonder that the consequent labour and anxiety, added to indifferent health, should in the end have told on his constitution. The strain becoming too great, it became necessary to try what wintering out of England could do for him. Alas! it was too late. He died in Jamaica towards the end of 1847.

The building had been in progress about six years; the shell only was completed, and all the internal finishing remained to be carried out. Elmes had more than once consulted Cockerell during the progress of the work, and had even nominated him to look after it during his visit to Jamaica; what more natural, therefore, than that he should succeed him as architect? It was a choice honourable alike to the memory of Elmes and to the Corporation of Liverpool. Cockerell was probably the one man in England at the time who could have carried the noble building to such a successful conclusion. Roughly speaking we may consider the whole of the interior finishings and the sculpture in the south portico to be his work. With regard to the latter, it appears that the subject was suggested by Elmes in 1843 and designed by Cockerell. To describe the interior of this splendid building would take a paper to itself. Suffice it to mention that Cockerell, rising to the greatness of the opportunity, gave of his best to the service of the work. The magnificent decorations of the great hall, the stateliness of the courts, the Doric beauty of the northern entrance hall, and the elegance of the circular concert room on the first floor are all due to his genius. For nearly seven years he laboured at the work, with the result that the Law Courts were opened in December 1851 and the whole building completed and formally opened in September 1854. Nothing could have been more fortunate in the circumstances than that the services of two such men as Elmes and Cockerell should have been available for the building and completion of one of the most splendid structures in Europe. The elder man, doubtless delighted to find his young friend such a faithful disciple of Greek art, carried on the style so ably begun externally, and finally gave us an interior of the highest artistic value.

That it has its faults, particularly in the means of access to the great hall itself, is not to be denied; but, as Sir James Picton, himself no mean critic, says in his description of the building, "with all its defects, St. George's Hall constitutes not only the architectural glory of Liverpool, but is one of the greatest triumphs of art in modern times;" and Fergusson speaks of it as producing "an effect of grandeur unequalled by any other modern building known," and as "the culminating and by far the most successful specimen of this style of art in England, and perhaps in Europe." This was written before the completion of the Opera House in Paris or the Law Courts at Brussels, but I venture to think that for grandeur of conception, beauty of proportion, and purity of detail the English example can give its French and Belgian rivals many points and hold its own in the end, notwithstanding the cost of each of the latter was four times that of St. George's Hall.

But if this and the other works I have been noticing were triumphs for the art of Professor Cockerell, he had his disappointments, like other men, specially architects. He took part in at least half a dozen important competitions in which he was unsuccessful. Taking them in the order of time they were University College, Gower Street; the Duke

of York's Column; the New Houses of Parliament; the Reform Club; the Royal Exchange; and the Carlton Club; and among his unexecuted designs were Falkland Palace, for Mr. Bruce, and sketches, made at the desire of the late Prince Consort, for the South Kensington Museum.

The beautiful perspective of his design for the Royal Exchange, drawn by himself, and his design for the Houses of Parliament are now the property of the Royal Institute, having been courteously presented by his son, Mr. S. P. Cockerell. In the Houses of Parliament it is interesting to observe how his classical proclivities struggle through the stipulated condition that the building should be of Gothic or Elizabethan architecture, and we have the somewhat curious combination shown in his drawings. For all its merit, however, one is bound to admit that neither in grasp of the subject nor in plan or elevation did he approach within measurable distance of Sir Charles Barry's magnificent structure. As to the Royal Exchange, it is pleasant to recall the words of Sir William (then Mr.) Tite, the successful competitor. In speaking of Cockerell's design he said "it was a design with four towers, drawn by Mr. Cockerell's own hand in pen-and-ink in the style of Piranesi, and of great power and effect," and that considered "as a work of art in connection with architecture it was one of the most remarkable he had ever known"—a noble tribute from one of the competitors to another.

In this connection also it is interesting to remember the collaboration of these two men in carrying out the London and Westminster Bank in the City. We have the story from Tite himself, and it is this: The directors of the Bank wished to build new premises, but did not desire a competition in the ordinary sense. At the same time both Tite and Cockerell had excellent friends on the direction who were desirous that their friend should be appointed architect; so there were in truth two architects in competition. Tite thought this an unworthy strife for the two to be engaged in, and proposed to Cockerell that they should act as joint architects, and so put an end to the contest. Cockerell replied that it would give him the greatest satisfaction to do so, and the arrangement was readily adopted by the directors. The building proceeded, and in the end they were complimented by the Board for the manner in which it had been carried out. Sir William further tells us that the exterior was marked by Mr. Cockerell's hand, the interior was more particularly his (Tite's), and, though the latter had since been much changed, the characteristic style of the architecture of the exterior has been preserved in all the extensions of the Bank. That was an incident of professional life alike honourable to both men, and I am glad to have the opportunity of bringing it to your notice this evening.

Cockerell was a many-sided man, and his work was many-sided as well. Besides being an accomplished architect and a brilliant draughtsman he was a learned archaeologist and much of a sculptor. Indeed, as to this last it becomes a moot point as to whether, if he had not been an architect, he might not have become a sculptor. In his researches abroad, in his relaxations at home, he studied this subject more than most men of his time, especially in its relation to architecture. To his energy we owe the discovery of the Egina and Bassæ marbles, the story of which, had I time to tell it, is one of the most interesting in his career. His dissertation on and restoration of the arrangement of the Niobe group, in which he contended they were pedimental sculptures, created much discussion, and, if a mere architect may be allowed an opinion thereon, a discussion which did little to weaken the strength of his theory. He demonstrated the proper purpose and position of the colossal statues at the Temple of Jupiter Olympius at Agrigentum, proving them to be caryatides forming an upper order or attic in the interior and supporting the main timbers of the roof, as set forth in the supplemental volume of Stuart and Revett's work.

He drew the figure with quite remarkable power and expression ; he managed to grasp the broad monumental style of the great Greek age he loved so fondly and understood so thoroughly ; as an instance of this, look at his design for the pediment of St. George's Hall, which for vigour of composition has few equals, Elmes himself entertaining no doubt about its being "one of the finest compositions in sculpture ever executed in this country."

A propos of this pediment may I digress for a moment to note the connection of Alfred Stevens, the sculptor, with the design, about which some little confusion seems at one time to have arisen ? The work, as you know, was executed by Nicholl, the sculptor, and about two years after Elmes's death—in 1849—Cockerell asked Stevens to make a drawing of the pediment for publication. He did so from the unfinished work in Nicholl's studio, and while so occupied made some suggestions for the improvement of the grouping of the figures, which, with the true sympathy of an artist for the opinion of such a man as Stevens, Cockerell adopted and had carried out by Nicholl. This drawing by Stevens is reproduced in Mr. Stannus's book on that master ; it is most interesting to compare it with the original design drawn by Cockerell himself, and published in the *TRANSACTIONS* 1863-64.

Of a kindred nature is the ornamental carving he designed for his buildings—fine examples of which are to be found on the Taylor Building at Oxford and on the Insurance Offices in Dale Street, Liverpool.

Professor Cockerell's labours and discoveries in Greek archaeology are too important and numerous for more than a brief reference in a paper mainly devoted to his work as an architect. They would take an evening to themselves and prove a most interesting and fascinating subject. If ever a man travelled with his eyes open, and not only his eyes but his mind as well, it was Cockerell. To an adventurous spirit he brought what has been defined as genius—the capacity for taking pains. He not only excavated and measured and plotted, but did so to such purpose that he became an acknowledged authority on all matters pertaining to Greek art. His researches extended over Greece and its islands, Asia Minor, Sicily, and Italy. He explored the temples at Ægina and Phigalia, at Athens and Agrigentum, at Bassæ and Delphi, Sardis and Hierapolis ; in fact wherever there was anything to be discovered and knowledge to be acquired there he went, and this too at a time when the whole country was in a most unsettled condition and travelling was anything but an easy holiday trip. There were always dangers from pirates and brigands, from the obstructiveness of petty local officials, the superstitions and something more of the natives, not to speak of illness from bad weather and worse living.

Some of his discoveries are set forth in his great work on the temples at Ægina and Bassæ, in the supplemental volume to Stuart and Revett's *Athens*, and in various papers, and it is hoped some day his diary may be published under the auspices of his son, Mr. S. P. Cockerell, as it is full of interesting matter relating to his travels.

He gave much attention also to the restoration of ancient classic work, and in many splendid drawings portrayed his ideas on the Roman Forum and the Baths of Caracalla, the Parthenon, the City of Athens, the theatre and a house of Pompeii, the mausoleum of Halicarnassus, together with a tribute to architects of all ages in *The Professor's Dream : a Synopsis of the Principal Monuments of Ancient and Modern Times*, and still more particularly to Sir Christopher Wren in an elaborate "General View of His Works."

It is pleasant to think he was not without honour in his own and other countries. He was a D.C.L. of Oxford ; he was elected an Associate of the Royal Academy when forty-one, a full Academician seven years later, and Professor of Architecture when fifty-two, holding the post for seventeen years, one of the most distinguished of the men who have filled the chair. Its present occupant, Professor Aitchison, who, as a student, sat at his feet in the lecture

room, bears testimony to the inestimable value of the lectures he delivered and the wealth of illustrations with which they were enriched. He tells us "the lecture room was always crowded with members of the Royal Academy, and others anxious to hear him and see his illustrations. The students hung upon his utterances, and while lecturing he would often pause and presently say, 'and so on;' he had dropped the thread of his discourse, forgotten his audience and the lecture room, and was in Athens, admiring the Parthenon and communing with Pericles and Phidias; at other times he would pour out vivid pictures of the glories of Athens, Syracuse, or Rome."

Abroad he had many honours conferred upon him. He was a Chevalier of the Legion of Honour, a member of the Institute of France, of the Royal Academies of Belgium, Munich, Berne, Denmark, Genoa, Athens, of St. Luke's at Rome, and of the American Institute of Architects. When only thirty-one he was appointed surveyor to St. Paul's Cathedral, and at forty-five succeeded Sir John Soane as architect to the Bank of England. In his latter capacity he erected branches of the Bank in Liverpool, Manchester, Bristol, and Plymouth, besides the Dividend Pay and Warrant Offices, afterwards pulled down for the New Drawing Office, at the Bank itself in Threadneedle Street.

In our own Institute he was an active member for many years, and one of our most distinguished Fellows. He was the first to receive the honour of Her Majesty's Gold Medal, and in 1860 our first professional President. Of all the honoured names to be found in either list none is more illustrious than that of Charles Robert Cockerell.

Cockerell died in 1863, and was buried in St. Paul's Cathedral, which had been under his loving care for over forty years. No more fitting resting-place could there be than in the masterpiece of Wren, whom he held in the highest honour and respect. By his death the Classical revival lost its most brilliant exponent, and England one of her most accomplished architects.

As his life drew towards its close the "Battle of the Styles," to which I referred above, became, if possible, more bitter, or at least more uncompromising. Men of undoubted genius had been drawn into the ranks of the Mediaevalists; the Gothic style was rampant, so to speak, over the land. Not to mention Gothic churches and mansions, we had Gothic town halls, Gothic hotels, Gothic offices, Gothic shops, and even Gothic theatres; when the competition for the building of the National Gallery in Trafalgar Square took place some of the designs were Gothic even for it, and in the greater competition for the Law Courts they were all Gothic, and though here and there throughout the country the Classic revival still held its own it must have been manifest to Cockerell that "the times were out of joint" for his beautiful Anglo-Greek. He did not live to know that the Mediaeval tide had reached its height in the Strand, that, in spite of a bigger wave now and again, the ebb had begun; the strife languished; the still small voice of tolerance made itself heard, soon to be followed by the vagaries and vapourings of Queen Anne: it needed only these last—" 'tis ridicule that kills"—and the exclusive reign of Gothic was over for ever.

Since then we have been slowly awakening to the greater freedom and higher air to be found in the work of men like Barry or Cockerell, and venturing to think the time appropriate for a study of what the latter did for us. I have endeavoured, however inadequately, to set before you the salient points of his art, in the hope that as whatever else the revivals did at any rate they made men think, so perhaps it may be again, and more especially with the younger members amongst us. It may also be thought instructive to contemplate the work of a great artist and scholar, if haply we may by diligence find something of the brilliant light that shone in his genius, and learn something of the great and ever abiding principles—principles not subject to the whims of fashion, but which have abided and will

abide for all time, and by which he was enabled to enrich our cities with the works of art I have had the honour and the privilege of calling your attention to this evening. I am well aware there are men amongst us who knew Cockerell personally, who are more competent to speak of his work than I can pretend to be, but I yield to none of them in cherishing a sincere admiration for the man and his art, and I feel I cannot close this paper more appropriately than in the words of Professor Aitchison, who tells us that "in the roll of British architects few have brought so many titles to admiration, ripe scholarship, exquisite delineation, masterly composition, uprightness, integrity, genius, and enthusiasm, and withal the dignified and refined manners of the high-bred English gentleman." Such in very truth was Charles Robert Cockerell.

DISCUSSION OF MR. BRYDON'S PAPER.

Mr. EDW. A. GRUNING, *Vice-President*, in the Chair.

DR. A. S. MURRAY [H.L.], F.S.A., Keeper of Greek and Roman Antiquities at the British Museum, said he was glad of the opportunity of cordially thanking Mr. Brydon for his appreciative and most sympathetic sketch of a man whom the Institute had always honoured highly. This was the third occasion on which a distinguished member of the Institute had devoted a special paper to the life and services of Professor Cockerell, and doubtless in time to come others would follow in their steps. But he would like to add that in the British Museum also his name was held in very high respect. They remembered that by his bringing home the frieze of Bassæ in 1814 he enabled the British Museum to take its first important step towards becoming a centre of Greek art in its noblest forms, instead of, as before, a miscellaneous collection of Roman and Græco-Roman sculpture. It was no fault of Cockerell's that two years previously, in 1812, the two famous groups of Ægina statues were lost to the Museum. Cockerell had helped to find them, and subsequently published them with most scholarly care, and in a splendid form. By his personal influence and exertions, the Government of the day had undertaken to purchase those sculptures at any cost, and it must have been a sore trial to a man of his patriotic spirit to see them ultimately go to Munich, owing to the blunder of an agent employed by the British Government. Two years later the Museum made its next great acquisition—the greatest acquisition ever made by any museum—the Elgin Marbles. Then followed at intervals the beautiful Nereid Monument from Xanthos, the remains of the Mausoleum at Halicarnassus, and of the Temple of Diana at Ephesus, to say nothing of the magnificent series of sculptures brought home by Sir Henry Layard from Assyria. Professor Cockerell was thus the pioneer of a movement which had placed the Museum in the front rank—a movement which they hoped was not yet exhausted. Some years ago he (Dr. Murray) had

the advantage, thanks to Mr. Pepys Cockerell, of having in his charge in the Museum several portfolios of drawings, together with certain sketch-books used by Professor Cockerell when travelling in Greece and the Greek Islands and in Asia Minor. Some of the drawings in the portfolios served as studies for the illustration of Cockerell's great work on the Temples of Ægina and Bassæ. Mr. Brydon remarked that the restoration in one of the sketches looked a little empty, and that Professor Cockerell had made a design for filling it up. At Munich there were a great number of fragments of statues from those two pediments, which had never been assigned to any place. Many attempts had been made to restore them on paper, but on the whole they were still content with Professor Cockerell's sketch, leaving those figures as they were. As regards the Niobe group, it struck an English visitor to Florence as peculiar to find hanging upon the walls of the Uffizi a sketch of Cockerell's proposed arrangement of the Niobide statues in the form of a pediment with a long description in Italian, the statues themselves being placed in anything but a pedimental form. As Mr. Brydon had indicated, there had been considerable discussion as to whether those statues were originally designed for a pediment; but for a good many years now no one of any pretensions in these matters thought of accepting anything else than Professor Cockerell's design. They had in the Museum many interesting and useful sketch-books of architects who had travelled in Greece towards the end of last century or the beginning of the present; but as a rule they differed from those of Professor Cockerell in that they lacked that element of distinction which apparently was inseparable from everything he put his hand to. He had been told by one who spoke from experience that Professor Cockerell, always ready to take any amount of trouble when his opinion was asked on some new theory of Greek architecture or such like, had the rare gift of

making the recipient of his opinion almost believe that he had found it all out for himself. He should like to add the personal testimony of one who was exceptionally qualified to give an opinion—viz. Professor Bötticher, whose *Tektonik der Hellenen* was probably the most learned and most ingenious treatise that had ever appeared on Greek architecture. It must be getting on for thirty years since he came to London, when he was already an old man; but he (Dr. Murray) well remembered finding him in a state of intense delight because of what seemed a strange coincidence—there was hanging in his room, at the house where by chance he had gone to stay, an engraving of the Acropolis of Athens as restored by the man whom of all men of his generation he admired, Professor Cockerell. It gave him much pleasure to propose a vote of thanks to the reader of the Paper. He had been particularly glad to be present on an occasion when the services of a truly great man had found so genial an exponent as Mr. Brydon.

Mr. H. HEATHCOTE STATHAM [F.], in seconding the vote of thanks, and expressing the interest he felt in the Paper, observed that there could be no better use to put their meetings to occasionally than to make them an opportunity for reviving the recollection of the achievements and the genius of some eminent member of former days. Such Papers were particularly interesting, as carrying them back to a time when architecture was viewed in a very different light from what it was now—at all events, by the younger men of the present generation. Which was right he did not pretend to say; but it was interesting to go back to a time when scholarship in Greek detail, and the application of it to modern buildings, was considered to be one of the highest objects to which an architect could give his labour and his talents. A great many of Professor Cockerell's buildings tended to show that though one might think that that revival or application of classic detail was illogical more or less, nevertheless there was a pleasure in it which could not be denied, and that it had had a very great influence in refining the taste of architects and inducing them to give the greatest possible study to the detail of their buildings. One of the buildings of Professor Cockerell's referred to by Mr. Brydon—viz. the branch of the Bank of England at Liverpool—he considered the most beautiful thing Cockerell had ever done. The photograph (p. 356) hardly gave a good notion of it, because of the distortion of the perspective. A view taken directly in front would give a better idea. The Doric order on the front of the building was treated on a very large scale, with the greatest refinement in the lines of the columns. This might be said to be an illogical application of the order; nevertheless, it was delightful in effect. Then, round the corner one found the flank of the building

treated in quite a different way; the arched windows with immense quoins all gave the idea of a bank, and at the same time conveyed the impression that this was the flank of the building; one got the state view of it in the front and the practical view at the flank. At that time there was this result, too, from that view of the architecture: it was the time of the great classical stylists—Donaldson and Cockerell in England, and Lesueur in France; architects whose minds were full of recondite learning about the architecture of the past. That sort of man had rather gone out now. "There were giants in those days." They were now occupied, generally, in more practical problems. Another thought, suggested by the Taylor and Randolph Buildings at Oxford, was that no matter to what detail and style a man might be bound, if he had a bold, grand, original general idea he would make something of it. Looking at the general design, with the low building in the centre and the two great blocks returning at right angles on each side, one saw that such an idea might be worked out in half a dozen different styles, but still it would be Professor Cockerell's idea, and still it would be great. He sometimes thought it would not be bad practice to set their students to translate celebrated buildings into other styles, to see what they could make of them by subordinating the details of the general idea. He (Mr. Statham) had grown up under the shadow of St. George's Hall, Liverpool, and all that Mr. Brydon had said about that building had been particularly interesting to him. His first recollection of taking an interest in architecture was when, at eight years of age, he was taken over the works as one of a privileged party, and saw the big drums of the columns lying on the ground. There were, he thought, one or two misconceptions about the relative parts Elmes and Cockerell took in it. The whole conception of the interior, with the deep arched recesses between the columns, was Elmes's; it was said, he believed, that he dashed off the perspective sketch of it in a fit of genius in twenty-four hours. He remembered particularly that, in Elmes's correspondence with Rawlinson, there were some remarks as to how he was to treat the capitals of those columns, so he must have designed the columnar part of the interior. Mr. Brydon referred to the fact that the building was to be used as a concert-hall as an idea coming afterwards; but it was the other way about. Liverpool used to have a triennial musical festival which was held in a church. The church not proving large enough, it was resolved to build a hall to be used for these musical festivals, and that was what St. George's Hall was intended for. Elmes, however, knew nothing about music, and he proceeded to design the building with a view to his own architectural glory. He conceived the splendid idea that the two courts should be at each end of the great

hall, and have a vista right through from court to court. But it became evident that this would never do for a concert-hall, and that the large organ would intervene. Elmes remarked angrily, in regard to this point: "Do you think I have made my hall as a case for your organ?" Several designs were made to get over this difficulty. A relative of his (Mr. Statham's) made a design in those days showing the organ grouped into two masses on each side, so that the vista could be kept. That, however, would never have done for a concert-hall, because part of the sound would have escaped into the courts, where it was not wanted. Ultimately Professor Cockerell made one of the finest things in the hall—the design for the present organ case, which was worth study. There was a great deal of fine detail about the front part of it, but the finest feature was the way in which he had treated the immense square wooden pipes, making them stand round like a circle of giants, forming a background to the metal pipes in front—one of the finest conceptions for an organ case that had ever been made. Speaking as a musical man, he entirely corroborated what Mr. Brydon said, not only about the beauty, but also as to the admirable acoustic properties of the small concert-hall—the best room he had ever been in for music on a small scale. On the other hand, it was a judgment on Elmes that the large hall was probably, on acoustic grounds, the worst concert-room in the kingdom. That came of designing a building without thinking of the purpose it was to be designed for. Another point in the decoration of the hall was the exceedingly fine and rich bronze folding-doors or gates which formed the entrances at two or three points. No doubt those were Professor Cockerell's design; as specimens of classic metal design they were very fine; he knew few modern things of the kind equal to them. At the end of his Paper Mr. Brydon had coupled the names of Professor Cockerell and Sir Charles Barry. He could not help wishing that some other member would presently follow the example Mr. Brydon had set, and give the Institute a Paper on Sir Charles Barry and his work. It had been a painful feeling to him to find very often that the younger generation of architects had almost forgotten Sir Charles Barry. He therefore ventured to suggest, as an admirable subject for a future Paper, the genius and works of Sir Charles Barry, to supplement and form a pendant to the excellent Paper they had had that evening on Professor Cockerell.

Mr. W. M. FAWCETT, M.A. [F.], said he had but little acquaintance with Cockerell's works, but one or two he knew very well. One was the University Library at Cambridge, a building very striking in itself, but not one in which the architect had been treated with full justice—that is to say, he had made a design for a large building, but only a very small piece of it had been carried

out. As regards its accommodation for books, it was often remarked in Cambridge that the cost for a place for a book was exactly 10s.; the building cost about £80,000, and it would only hold 60,000 books. Not many libraries could be built on that scale. All sorts of schemes had been devised for adding to the book accommodation, but these more or less spoilt the design; books, however, went on increasing every year, and room had to be found for them. At the Fitzwilliam Museum, where Cockerell came in after Basevi's death, he made one or two striking alterations. Basevi had made a pediment in front with a flight of steps up to it, and then, on getting into the hall, a descending staircase immediately in front. Cockerell, thinking this arrangement unsatisfactory, made a central staircase to go up, and the two wings to go down. A great improvement brought about by Cockerell was the change in the material of the large columns in the centre. Basevi had meant these to consist of an iron core with a covering of scagliola. Cockerell thought such an important building ought not to be finished in that way, but that the columns should be of granite; and he wanted about £900 for the four columns. There was a great agitation in the University about such extravagance; it was said no one would know whether they were scagliola or granite. However, it was carried in Cockerell's favour by one vote, and thus succeeding generations reaped the benefit of it. On entering the building one's attention was immediately arrested by these magnificent columns—they had a very striking effect.

Mr. R. PHENÉ SPIERS, F.S.A. [F.], referring to the vestibule at the Fitzwilliam Museum, said that thirty years ago he happened to be with the late Sir Digby Wyatt, who was asked to devise some scheme for increasing the width in front of the staircases leading to the upper and lower galleries. He asked Mr. F. P. Cockerell to lend him his father's drawings, if he had any, and these drawings came into the office. When Sir Digby Wyatt noted the extraordinary care with which the staircase had been set out by Professor Cockerell—every step drawn with a slight curve, so that from whatever point of the hall one went the step presented itself to the tread—he (Sir Digby Wyatt) was so impressed that he positively refused to alter it. Ultimately he suggested that under the portico, which served no purpose whatever, should be brought out a projecting bay of the width of one of the intercolumniations, so as to leave the staircase intact. He (Mr. Spiers) was sorry to say that did not meet with the approval of the University authorities, and shortly afterwards they asked Mr. E. M. Barry to advise them on the point. He, warned probably by the fate which befell Sir Digby Wyatt's advice, recommended the alteration of the staircase. It passed away, and now they had a very commonplace and

ordinary arrangement, with the luxury of marbles, which, he was afraid, did not compensate for the loss of Cockerell's work. What struck Sir Digby Wyatt most was the extraordinary way in which the ceiling was set out. On examination of the drawings, which were made to a large scale, it was found that there was scarcely a horizontal line in them. Professor Cockerell probably had noticed the optical illusion formed by the tendency to sink in the centre of the flat portion of a ceiling, and he tried to correct this by slight curves, imperceptible to the ordinary eye, in order to give just that subtlety of aspect which would add to its beauty. As the ceiling was oblong on plan, with a dome in the centre and flat portions each side, it was a difficult task, and Sir Digby Wyatt was astounded by the great pains taken and calculations made to produce the refinement required. The ceiling, which was, he thought, still in existence, showed that Professor Cockerell had attempted in that building to bring in that subtlety of line which was found in the Greek buildings of old. There was another incident respecting Professor Cockerell's work which might interest members. Some ten years ago the Institute had a visit from one of its Corresponding Members, the Baron de Geymüller, and he (Mr. Spiers) offered to escort him through the City to show him some of the more prominent buildings, old and new. He took him up Leadenhall Street to look at Mr. Norman Shaw's warehouse, and coming back (it was either Saturday afternoon or Sunday—at all events, the City was quite empty), about five o'clock, when they reached the west side of the Royal Exchange, where he was taking him to see the Sun Fire Office, he noticed a carriage standing on the opposite side of the road, and a figure standing by, with his arms folded, looking at the building in question. When he got near he recognised the President of the Royal Academy, Lord (then Sir Frederick) Leighton, who had come down to the City in order to look at this building of Professor Cockerell's. He (Mr. Spiers) introduced the Baron, and Sir Frederick told him that whenever he wanted to revivify himself with the sense of the beauty of Greek work he used to come down and look at Cockerell's works.

THE CHAIRMAN said that but for the lateness of the hour he would have liked to say a few words on the subject of Mr. Brydon's Paper. When a pupil he had received much kindness and much advice from Professor Cockerell—indeed no one who came in contact with him could ever forget his courtesy and kindness. As to the Sun Fire Office alterations, he passed that building four or five times a day, and always looked at it with regret. It was not only spoiled by the alteration in the architectural features, but also by doubling the length of one of the sides. It was a great pleasure to have among them that

evening several members of the family of the distinguished Professor—Mrs. Frederick Cockerell, Mr. Pepys Cockerell, the son, and also, he believed, two granddaughters and a grandson.

Mr. BRYDON, in responding to the vote of thanks, expressed his acknowledgments to Mrs. Frederick Cockerell for her kindness in lending for the occasion the series of drawings exhibited which belonged to the Professor; also to Mr. Pepys Cockerell for his kindness and assistance; to Professor Simpson, of Liverpool, and the Corporation of Liverpool for the loan of several photographs; and to the University Library Committee of Edinburgh for the drawings of the Calton Hill Monument. He should like to say, with regard to Mr. Statham's remarks as to St. George's Hall, that he did not desire for one moment to detract from the glory and genius of Elmes, who designed that wonderful building; but, as they probably knew, it was the outcome of two competitions and the endeavour to unite two buildings together. There was a competition first for a concert hall, to be called St. George's Hall, which was won by Elmes when only 24 years of age. Afterwards it was found there was not sufficient money and that the building could not go on. In the meantime there was a competition for the Assize Courts, and Elmes won that also. Then came the question as to what was to be built, and how it was to be built. It ended in the Corporation taking the whole thing over, and the building was re-designed with the idea of combining the two, and the result was what they saw to-day. That was the genesis of the building. No doubt the great idea of the vista through the building was the ruling matter in Elmes's mind.

MR. EDWARD W. HUDSON [A.] writes:—

I think the younger members of the Institute especially are indebted to Mr. Brydon for devoting so much time just now to bring to notice the work of one of the "giants" connected so closely with it in its earlier days, and whose exertions on behalf of art are apt, in so utilitarian an age as the present, to be forgotten. I was surprised to see the subject of the paper recently accused of being "fastidious and wanting in decision," and it was suggested that, in partnership with Sir W. Tite, a stronger result would have been obtained. Such a sweeping judgment, without any explanation or reason, does not merit much attention. In one way a great artist is always fastidious, if by that we mean that he is dissatisfied with his greatest achievements. It may be matter of regret that so few men now have time, and, I may add, encouragement, to follow academically the mother of the arts, by the hand of archaeology, which, although (as Mr. Brydon reminded us) not architecture, is a trusty and valuable handmaid thereto. The work of Professor Cockerell and of

his predecessors and successors, much as we may admire its simplicity, nevertheless forms, in my humble judgment, an object-lesson in several ways: primarily that the classic revival, especially upon Greek lines, is not adapted to present-day wants; and while we may feel regret at the alterations and additions to the Professor's work made from time to time, they all point indisputably to the fact that it does not lend itself to domestic, official, and civil requirements, whatever we may say or advance as to those of an ecclesiastical nature. The fettering effect of the "Five Orders" upon plan, making it to so great an extent subservient to regularity of elevation, the restriction of fenestration by structural lines which have no constructive necessity, all point to the fact that "Pagan architecture"—the term is apt, though it may seem harsh and old-fashioned—is unsuited to modern life, or at all events is many times less suitable than the style indigenous to northern Christendom. If this be so, its perpetuation as an example for students who have to think out everyday problems of construction will not greatly help them in their work. Putting aside for the sake of argument the creed of Pugin and Ruskin, and their utter condemnation of classic work—not so very much stronger, by the way, than Cockerell and Tite's condemnation of the Gothic style—is it not by the facility they respectively offer for alteration, enlargement, and rearrangement that they must be judged? The Sun Fire Office is admittedly spoiled by the addition of a story, the original one being entirely useless for office purposes, nor could a story have been removed without destroying its proportions. Whereas, the addition or subtraction of a story to, say, Westminster Palace, or even such a building as Westminster Hospital, is neither difficult nor destructive of general effect. Can it be said that the old Post Office, St. Martin's-le-Grand, and the Hunterian Museum, Lincoln's Inn Fields, are in their altered condition and appearance satisfactory? This, I know, is a twice-told tale; but it may be necessary to bring up the old arguments once more, and they may be found outside Pugin's *Contrasts*, ably set forth *pro* and *con* by Sir William Tite in his Address to the

Institute, and in Sir G. G. Scott's rejoinder in a Sessional Paper published in the *TRANSACTIONS*, Vol. XXI. I have some recollection of a difficulty that confronted the architect to one of the huge halls above referred to, where, from the impossibility of getting an extra room for office purposes, one was slung up on to the heavy roof trusses by means of rods.

I can hardly think that the old sentiments on design, once so powerful at the Institute, are so dead but that some members would have said a word for the style so dear to them if they had been at the meeting, unless they have come to believe that Greek and Roman in their simplicity are more suitable for English buildings than some of the styles now in vogue. The study of Classic architecture has charms of its own which all may appreciate, but which need not be studied for reproduction in the supply of modern wants, nor yet to deceive the antiquary of A.D. 3000 by finding on Calton Hill a ruin which, in the absence of legible inscription, might give the impression that it had been the site of a Greek colony.

Some quarter of a century ago, an historical sketch of the Institute's rise and progress was prepared by Mr. C. L. Eastlake, and read at a general meeting. I notice that among the great names no mention occurs of the eminent subject of Mr. Brydon's Paper; and although notices of Professor Cockerell's work, and an appreciation after his decease, are to be found in the records of the Institute, there are many to-day to whom, as Mr. Brydon said, he and his work are unknown, and by whom the records will never be seen; therefore one may hope that an account of our great dead and their works may, as Mr. Statham suggested, from time to time be given according to the precedent so happily formed; and, further, that the historical sketch referred to may be amplified, and brought up to date for the present generation of architects, so that they may find that incentive to striving after perfection which history should offer. If I may make one more suggestion, it is that the Council might consider the desirability of having the names of all past Presidents written on the wall behind the presidential chair, with the dates of their service.

THE BENDING STRESSES IN FLAT RECTANGULAR CONCRETE FLOORS.

By W. DUNN.

ENGLISH books on applied mechanics—or at any rate such as are in common use—give formulæ for the strength of flat plates, but not the theory upon which they are based. I propose to explain these formulæ, and give a diagram enabling anyone to find the approximate maximum stresses on flat rectangular plates uniformly loaded, as readily as the same stresses on simple beams.

For a flat square plate supported on all edges and uniformly loaded, the bending moment and the stresses on the plate are given as half those due to the same loading on the same plate supported as a beam at two opposite edges only.

This assumes that the opposite sides act independently; or that, while a small square particle in the centre of a simple beam is under bending stress on two opposite faces only, in such a plate

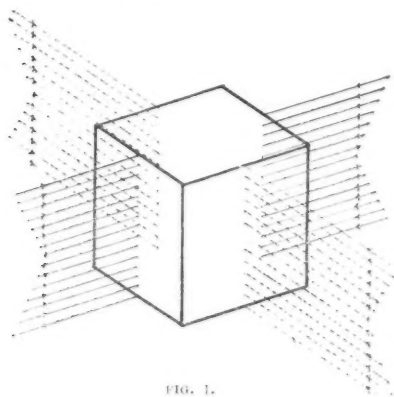


FIG. 1.

there are equal stresses on all four faces as in fig. 1, where the firm arrows indicate the stresses on the beam, and the dotted arrows the additional stresses in the plate.

The maximum bending moment is

for the beam $\frac{W l^2}{8}$; for the plate one half or $\frac{W l^2}{16}$.

The maximum stress per square unit is

for the beam $s = \frac{6 W l}{8 b d^2}$; for the plate $s = \frac{6 W l}{16 b d^2}$

or as $b = l$, $s = \frac{3 W}{8 d^2} = \frac{3 W l^2}{8 d^2}$.

* For explanation of the symbols W , l , &c., see note at end.

The maximum bending moment for the beam fixed at ends is $\frac{W l^2}{12}$; the maximum bending moment for the plate fixed at all edges is as before, one half or $\frac{W l^2}{24}$. The maximum stress per square unit for the beam fixed at the ends is $s = \frac{W l}{2 b d^2}$. The maximum stress per square unit for the plate fixed at the edges is one half or

$$s = \frac{W l}{4 b d^2} = \frac{l^2 W}{4 d^2}.$$

This is the result given without demonstration by Professor Unwin in *Elements of Machine Design*, p. 75 (7th ed.).

From this we also have

$$d = \sqrt{\frac{W l^2}{4 s}}; \quad l = \sqrt{\frac{4 s d^2}{W}}.$$

Note in using these equations that the load w or W includes the weight of the plate as well as the load on it.

The maximum bending stress on the oblong rectangular plate uniformly loaded may be obtained as follows: The maximum stress is on the particle in the centre of the plate, as at 5 in fig. 2, and the tendency is to split along the long axis, i.e. along the line 3, 4, which we shall call L . The short axis 1, 2, we shall call B .

Consider first one elemental strip 1, 2, in the centre of the length as a simple beam of the span B , of unit width; of a depth equal to the thickness of the plate and under an uniform load equal to w_b per lineal unit. The deflection of this simple beam in the centre, by the ordinary formula, would be

$$\Delta_b = w_b B^4 \frac{5}{384 E I}.$$

Consider next the similar elemental strip 3, 4, in the centre of the width, as a simple beam of span L , of unit width, and of a depth equal to the thickness of the plate. This simple beam bears an uniform load equal to w_L per lineal unit. Its deflection would be

$$\Delta_L = w_L L^4 \frac{5}{384 E I}.$$

Now as these two elemental strips are part of the plate, the deflection at the centre 5 of each beam must be equal, and as the modulus of elasticity E

and the moment of inertia I are by our hypothesis the same for both beams, it follows that

$$w_B B^4 \frac{5}{384 EI} = w_L L^4 \frac{5}{384 EI}, \text{ or } w_B B^4 = w_L L^4.$$

Now the total load W per square unit is equal to the sum of these two.

$$W = w_B + w_L.$$

In other words, of the total load per square unit W , one portion w_B is borne by the sides and one portion w_L is borne by the ends.

We proceed as follows:

$$w_B B^4 = w_L L^4.$$

Adding $w_B L^4$ to both sides we have:

$$w_B B^4 + w_B L^4 = w_L L^4 + w_B L^4.$$

$$w_B (B^4 + L^4) = L^4 (w_L + w_B).$$

$$w_B (B^4 + L^4) = L^4 W.$$

$$\therefore \frac{L^4 W}{(B^4 + L^4)} = w_B.$$

We have here w_B in terms of the total load per square unit, the width and the length.

Now the bending moment of the elemental strip or beam 1, 2, is, by the ordinary formula,

$$\text{Bending moment of 1, 2} = \frac{w_B B^2}{8}.$$

Substituting the last value of w_B , this becomes

$$= \frac{W L^4 B^2}{8 (B^4 + L^4)}.$$

To find the stress on the elemental strip or

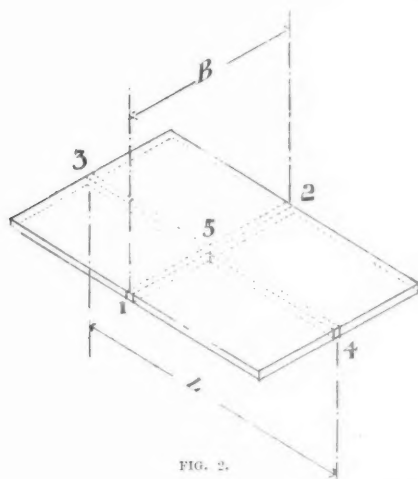


FIG. 2.

beam 1, 2 at the centre point 5 (fig. 2) which is the maximum stress at the centre of the plate,

this must be made equal to the moment of resistance of the elemental strip 1, 2.

$$\frac{W L^4 B^2}{8 (B^4 + L^4)} = \frac{s b d^2}{6}.$$

Remembering that b the breadth of the beam 1, 2, was taken as unity,

$$\frac{6 W L^4 B^2}{8 (B^4 + L^4) d^2} = \left(\begin{array}{l} s \text{ the maximum stress in the} \\ \text{plate.} \end{array} \right)$$

This value of the bending moment corresponds with that given by Professor Rankine without demonstration on page 544 of his *Civil Engineering*. He puts it in a slightly different form, using W to signify the total load uniformly distributed (covering the whole plate). The result is that he gives the total bending moment on the length of the plate,

$$\frac{W L^4 B}{8 (B^4 + L^4)},$$

which must be equated to the moment of resistance of the whole section of the plate taken along its longer axis; i.e. to

$$\frac{s L d^2}{6}.$$

As W in this case equals $W L B$, we have

$$\frac{(W L B) L^4 B}{8 (B^4 + L^4)} = \frac{s L d^2}{6}.$$

$$\therefore s = \frac{6 W L^4 B^2}{8 (B^4 + L^4) d^2} \text{ as before.}$$

Note that when L and B are equal—i.e. when the plate is square—the bending moment becomes $\frac{W L}{16}$, and the stress becomes $\frac{3 W}{8 d^2}$ as before.

Rankine says the result is approximate, but may be considered to involve no error of practical importance.

In the foregoing it has been assumed that the plate is of a homogeneous material, such as iron or steel. Concrete is not so homogeneous in structure, and the larger the pieces of the aggregate the less it is so. We cannot take account of this want of homogeneity save by allowing a larger factor of safety.

These formulae involve the fourth power of numbers and are troublesome to use. I have therefore prepared a diagram by the aid of which the bending moments in rectangular plates uniformly loaded and supported on all edges may be obtained as readily as the bending moments on simple beams (see fig. 3).

To find the bending moments from this diagram,

(1) Divide the length of the plate by the breadth.

(2) Trace the vertical line corresponding to this

result from the scale at the foot of the diagram to intersection with the curved line.

(3) Read from the scale at the left-hand side the value of the horizontal through the point of intersection.

(4) Multiply the total load on the plate by the breadth of the plate, and by this number, and

at the ends L , and the diagram shows clearly that as the length becomes greater in proportion to the breadth of the plate, the strength approximates more to that of a similar plate supported at the sides only. The bending moment of a square plate is .5 of the bending moment of a slab of similar size and under similar load supported at two sides

Rectangular Plates
supported at all edges.
Bending Moment

$$= \frac{WB}{8} \times 1.00$$

Rectangular Plates
fixed at all edges.
Bending Moment

$$1.00 \times \frac{WB}{12}$$

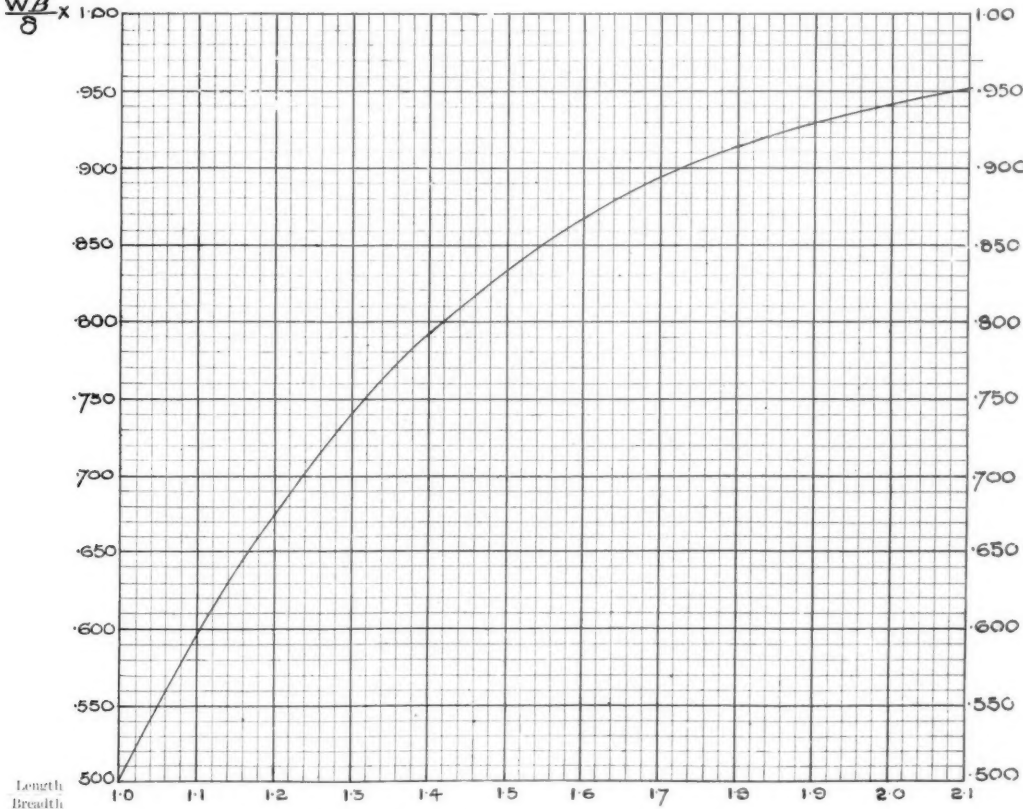


FIG. 3.—Diagram showing the Maximum Bending Moments on Flat Rectangular Plates, uniformly loaded, and supported or fixed at all edges.

divide by eight. This will give the bending moment (in terms of the units employed, *i.e.* inch-lbs., foot-lbs., foot-cwts., &c., as the case may be),

$$\frac{WL^4B}{8(B^4 + L^4)} = \text{moment of resistance} = \frac{sLd^2}{6},$$

from which the stress or thickness may be found.

Now $\frac{WB}{8}$ is the bending moment on the plate acting as a simple beam of span B not supported

only. But the bending moment of a plate whose length is twice its breadth, is .941 of the bending moment of a similar slab supported at the sides only. Accordingly, when the length becomes twice the breadth, it is an error on the side of safety to calculate the strength of such a plate as that of a simple beam supported at the sides only.

If we now consider the case of a plate fixed at all edges and not merely supported, we should find the deflection Δ_B of an elemental strip 1, 2,

under an uniform load w per lineal unit, according to the usual formula for the deflection of a beam fixed at the ends, to be

$$\Delta = \frac{w B^4}{384 E I}$$

From this we find as before,

$$w = \frac{L^4 W}{(B^4 + L^4)}$$

and as the bending moment for an elemental strip 1, 2, considered as a beam fixed at the ends is

$$\text{Bending moment} = \frac{w B^2}{12}$$

on substituting the value of w from the previous equation, we have

$$\text{Max. bending moment on the elemental strip} = \frac{W L^4 B^2}{12 (B^4 + L^4)}$$

To find the stress we have to equate this as before to the moment of resistance of the elemental strip, i.e.

$$\frac{s b d^2}{6} = \frac{W L^4 B^2}{12 (B^4 + L^4)}$$

or, as $b = \text{unity}$,

$$s = \frac{6 W L^4 B^2}{12 (B^4 + L^4) d^2}$$

Professor Unwin, in *Elements of Machine Design*, p. 75 (7th ed.), gives this last result, but without explanation.

The diagram fig. 3 may be used to find the bending moment in this case also, taking $\frac{W B}{12}$ as the multiplier of the vertical scale, as shown in the right-hand margin.

It may be well to refer to a moment to the question of fixed ends. Let fig. 4 represent the end of a beam or slab of concrete in a chase in a brick wall. The slab, being perfectly horizontal before the load bears on it, deflects when the centering is removed and the load comes on; and the ends tilting up assume a position such as that shown in an exaggerated way by the dotted lines on the figure. If the slab were perfectly fixed, the ends would not move. Such a degree of fixing cannot be got in an ordinary chase. If the concrete has been well forced into the chase, the upper part may draw out slightly, but the lower part will press against the brick. The resistance to this will produce a sort of arch action in a slab supported on two sides and dome action in a slab supported all round.

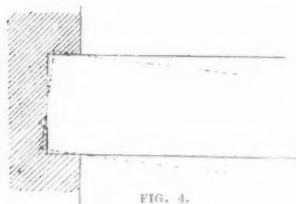


FIG. 4.

Perfect fixing is practically only obtainable in the case of fig. 5, where the concrete is continuous over the tops of the supporting joists or walls. In

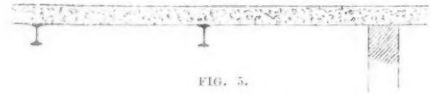


FIG. 5.

such a case the maximum stress occurs at the edges and not at the centres of the slabs. This may account for the cracking over the joists in slabs of concrete imperfectly fixed.

To find the bending moment and then equate this to the moment of resistance of the plate, in order to find the maximum bending stress, even with the aid of the diagram fig. 3, entails some labour which may be saved by the use of the diagram fig. 6.

To find the maximum bending stress in rectangular flat plates uniformly loaded, either supported at all edges or fixed at all edges, by the aid of fig. 6, proceed as follows:

- (1) Divide the length of the plate by the breadth.
- (2) Trace the vertical corresponding to the result on the scale at the bottom of the diagram to intersection with the upper curved line in the case of a plate supported, or to the lower curved line in the case of a plate fixed at all edges.
- (3) Follow the corresponding horizontal line to the left-hand margin and note the value.
- (4) Multiply the total load on the plate (including the weight of the plate) by this value and divide by the square of the thickness of the plate. The result is the maximum stress as before. If W and d are in lbs. and inches, the result is in lbs. per sq. inch.

As an example find the maximum stress on a concrete slab 14 feet 6 inches long, 8 feet 6 inches wide, 6 inches thick under a load of 15 tons (= 33,600 lbs.) supported on all edges.

$$\frac{14.5}{8.5} = 1.7.$$

Trace the vertical 1.7 to intersection with the upper curved line and find the value = .394, then $\frac{33,600 \times .394}{36} = 367$ lbs. per sq. in. maximum bending stress on the plate.

One of the slabs tested by Colonel Seddon, of this size and thickness, broke under this load. Had the slab been perfectly fixed all round the edges, we should have had $\frac{33,600 \times .262}{36} = 244$ lbs. per sq. in. maximum stress.

It may be asked what is the maximum safe bending stress on concrete slabs. This depends on the proportion and nature of the materials, the care and skill with which the mixing is performed, and the age at which the load comes on. Concrete varies from the loose and friable material

used in many foundations to the strong compact artificial stone which is used in steps and landings, and the strength varies very widely. For ordinary floor concrete of 1 of cement to 4 of hard broken brick made by builders' labourers with proper supervision, I should suggest a maximum of 80 lbs. per sq. in. at the end of four weeks; for similarly made coke breeze concrete, about 60 lbs. For concrete of the nature of artificial stone made

with specially good materials by skilled workmen, a much higher value—say up to 150 or 200 lbs.—may be taken.

I have examined the records of many tests of various mixtures and ages, and find the cross-breaking strength varies from 100 lbs. to a little over 700 lbs. per sq. in. A floor concrete as usually made, of 4 to 1, might be expected to fail under about 300 to 350 lbs. per sq. in.

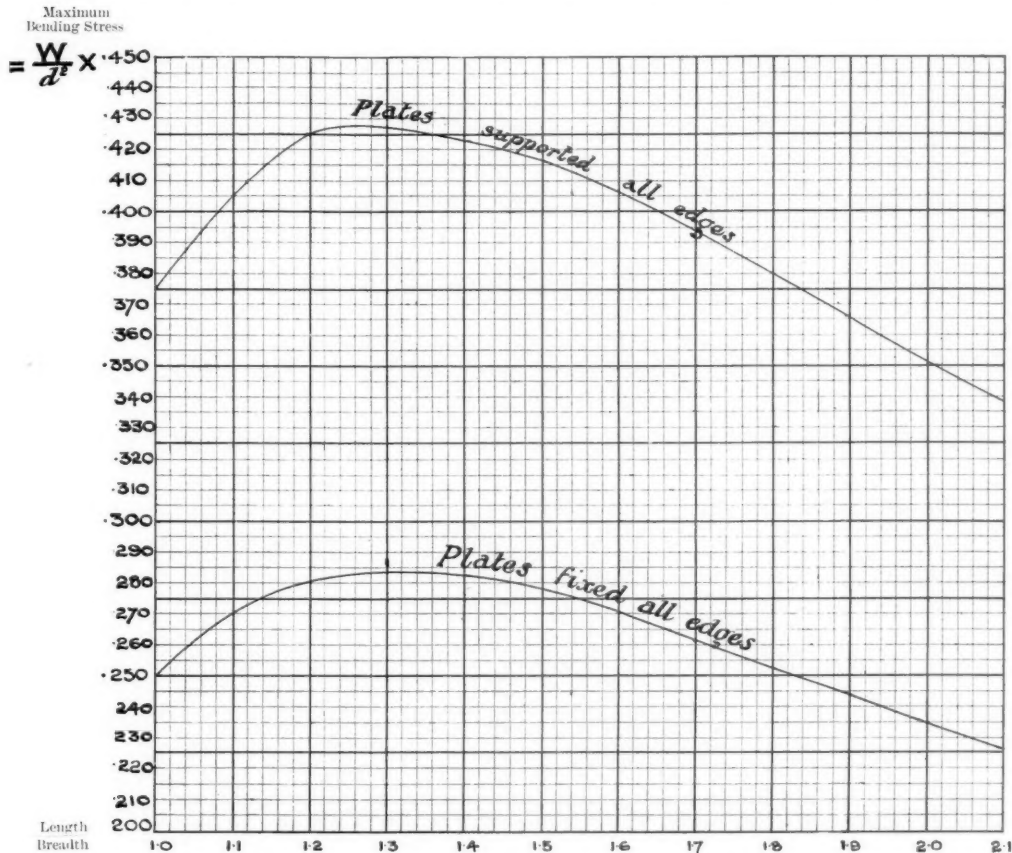


FIG. 6.—Diagram showing the Maximum Bending Stress in Flat Rectangular Plates, uniformly loaded, and supported or fixed at all edges.

Explanation of the symbols used in the foregoing note.

W = total uniformly distributed load on a beam or rectangular plate.
 W = load per square unit uniformly distributed.
 w_B } as described in body of paper.
 w_L }
 b = breadth of any beam.
 l = length of any beam.

d = depth of any plate or beam.
 s = maximum bending stress in plate or beam.
 E = modulus of elasticity.
 I = moment of inertia of a beam.
 B = breadth of rectangular plate.
 L = length of rectangular plate.

NOTE.—Any system of units may be used. Thus s , W , w_B , w_L and E may be in lbs. per sq. inch, and W in lbs.; b , d , B , L may be in inches, and I in quadric inches; in this case the bending moments will be found in inch-lbs.



9, CONDUIT STREET, LONDON, W., 26th May 1900.

CHRONICLE.

The Architectural Congress, 1900.

The attention of members is directed to the *Supplement* issued with the present number of the *JOURNAL*, which contains a Provisional Programme of the arrangements for the Architectural Congress to be held in London under the auspices of the Institute during the week commencing the 18th June. A complete list of the General Committee of the Congress is also given, together with particulars of the *Conversazione* to be held at Guildhall on the 19th June, and of the Annual Dinner at the Whitehall Rooms on the 22nd. As already announced, the date of the Presentation of the Royal Gold Medal, originally fixed for the 25th, has been altered to the 18th June, and the presentation will be made at the first Meeting of the Congress. In the unavoidable absence of Professor Lanciani, whose engagements prevent his leaving Rome at this season of the year, the Medal will be received on his behalf by one of the Secretaries of the Italian Embassy in London.

Special Elections to Fellowship.

At the Council Meeting of the 30th ult., the following gentlemen were specially elected to Fellowship of the Royal Institute, under the proviso to By-law 9—viz.:

JOHN COATES CARTER, Bank Buildings, St. Mary Street, Cardiff, President of the Cardiff, South Wales, and Monmouthshire Architects' Society.

FRANK WILLIAM WILLS, Foster's Chambers, Small Street, Bristol.

Honours for the President of the Allied Society at Dublin.

It is officially announced that the Lord Lieutenant of Ireland has intimated his intention of conferring the honour of Knighthood, with the approval of Her Majesty, upon Mr. Thomas Drew [F.], R.H.A., President of the Royal Institute of the Architects of Ireland.

The late F. W. Stevens, C.I.E. [F.].

The Times of India of the 10th of March has a long and very appreciative notice of the career of Mr. F. W. Stevens, whose death, which occurred at Bombay on the 5th March, was announced to the Institute at the General Meeting of the 2nd ult. One intimately acquainted with his work writes:—"The city of Bombay has lost in Mr. Stevens a man who did infinitely more for its embellishment than any other of our generation. His name is written imperishably upon its face, and no one could wish for a more splendid memorial in the scene of his life-work than his genius has raised to him. Mr. Stevens was an artist in the truest sense of the term. His profession was not merely the labour, it was also the delight of his life. . . . Endowed with creative genius of a very high order, gifted to originate with boldness and distinction, he yet, by a somewhat rare combination of qualities, loved almost equally the details of his art." The same writer, referring to some of the most admired of his buildings, says: "He carried out in them with conspicuous success that blending of Venetian Gothic with Indian Saracenic by which he created a style of architecture so excellently adapted to the climate and environment of Bombay."

Frederick William Stevens was born at Bath, and was articled in 1862 for five years to Mr. Charles E. Davis, Superintendent of Works to the Corporation of Bath. In 1867, having passed a competitive examination at the India Office, he was appointed Assistant Engineer in the Indian Public Works Department, taking up his duties the same year at Bombay under General Fuller, R.E., the Government Architect. Various promotions followed, and in 1876 he was made Government Examiner to the Bombay School of Art. In 1878 he was appointed Architectural Executive Engineer to superintend the erection of the buildings he had designed for the great terminal station at Bori Bunder. This building, the largest erected in Asia in modern times, stands as a fine example of Mr. Stevens's creative skill. Public appreciation of the work was shown by his being honoured with a Fellowship of the Bombay University. In 1881, after prolonged correspondence, the Government, loth to part with the services of so able an officer, reluctantly accepted his resignation, which he had tendered some four years previously. Prior to his retirement from the Department, Mr. Stevens had been appointed a Government member of the Municipal Corporation, and in 1887 Lord Reay made him a member of the Commission for the further extension of Bombay. In 1888 the Bombay Corporation charged him with the design of its splendid pile of Municipal Buildings. This is one of Mr. Stevens's finest works; in carrying it out he came to England and opened an office at Bath, engaging several assistants for the preparation of the first plans.

After about a year in England he returned to India to superintend the erection of the buildings. In 1889 the Order of Companion of the Indian Empire was conferred upon him "for services rendered in connection with public buildings in Bombay." Others of Mr. Stevens's works in Bombay in later years are the new administrative offices of the B. B. and C. I. Railway at Church Gate, the reconstruction of the Oriental Life Assurance Offices from the premises formerly occupied by the Cathedral High School; in earlier years the Royal Alfred Sailors' Home and the Post Office Mews on the Apollo Bunder. His last work was the designing of the Chartered Bank Offices, the foundation stone of which was recently laid. In other parts of the country he designed and carried out the Government House, Naini Tal, the Court Houses at Mehsana in the Baroda territory, the Standard Life Offices, Calcutta, buildings in connection with the waterworks at Cawnpore, Agra, and Benares, and the church at Igatpuri. As Executive Engineer of the Presidency Division he undertook numerous works in connection with drainage, water supply, sea walls, reclamations, and roads.

Mr. Stevens was in his fifty-third year, and had been a Fellow of the Institute since 1883.

The Ducal Palace, Venice.

It appears from a report by Mr. Consul de Zuccato on the Trade and Commerce of Venice for the years 1898-9, recently printed by the Foreign Office, that although some exaggerated reports were lately circulated with regard to the condition of the Doge's Palace at Venice, it is a fact that it was in urgent need of repair. The resolution of the Supreme Council of Fine Arts in Rome with reference to the safety of the palace was very opportune, as it induced the Government to order the execution of the necessary work of repair and the removal of the books from the Library of St. Mark, the weight of which was endangering the building. Some of the vaults in the courtyard have been strengthened and the shoring removed; several beams in the ceilings of the Sala Avogaria and the Sala Quarantia have been replaced and others repaired, and the floors put in order. Iron bars are being passed through the floors of the Sala dei Pregadi or del Senato, the Sala del Consiglio dei Dieci, and the Sala della Bussola, to tie together the two fronts of the building. The old rotten beams in the roof of the palace fronting the angle of the Piazzetta are being removed and new beams inserted. It is to be regretted that the books of the Marcian Library and the sculpture are still in the palace, although arrangements have been made for transferring them to the palace formerly the Zecca, or Mint, adjoining the Biblioteca on the Molo. Many of the ancient works of art, which were stored in the cellars, including a lion by Jacobello del Fiore, have been restored and replaced in their original positions in the palace.—JOHN HEBB.

REVIEWS.

GOTHIC ART IN ENGLAND.

A History of Gothic Art in England. By Edward S. Prior, M.A. With illustrations by Gerald C. Horsley, and many Plans and Diagrams. Imp. 8o. Lond. 1900. Price 31s. 6d. net. [George Bell & Sons, York Street, Covent Garden, W.C.]

Mr. Prior's *History of Gothic Art in England* may fairly claim the best sort of praise, in that it rises to the height of a great subject. It is not a long book, but it covers an extensive field, though not one quite as large as is suggested by the title. It is based on an intimate study of examples that are not confined to England in the narrow sense of the word, and it is coloured throughout by a generous enthusiasm for their rare and manifold beauties. On these the writer discourses with brightness and point, and if his language is at times somewhat "precious" we accept the forced expressions as phrasing the personal sentiment which is throughout characteristic of the work. In his general views the author is a pronounced mediævalist, and, as a consequence, anti-restorer. He has a patriotic conviction of the superlative excellence of English Gothic architecture, even in some of those points on which native critics are apologetic. With a philosophic grasp, that has been wanting to so many who have previously dealt with the theme, he treats this architecture as a whole, and from the point of view of development, seeking for the prototypes of Plantagenet forms in Norman and tracing in the latter a survival of Saxon traditions. Not content, however, with linking together the earlier and the later phases of the art, the author seeks to disentangle the various threads of tradition and influence, ecclesiastical, artistic, and local, which unite to make the architecture of each epoch. He endeavours to distinguish the plans and methods of the different religious orders, the forms of pier and tracery and ornament characteristic of the north or the south-east and south-west of the country; to exhibit the working upon art of social movements; even to trace the influence of the great quarries upon the ultimate shapes of the material they furnished. This cannot, of course, be done without extensive generalisations, and in stating these Mr. Prior is always positive and at times a little arbitrary. It may be said at once that the writer of these lines is not on that account going to quarrel with him. So long as the views expressed in a work of the kind have a basis in first-hand observation and thought, they should be received with respect and carefully weighed. We need not accept them as they stand, but occasional dogmatism and here and there a stilted phrase should not stand in the way of their consideration.

There is this advantage in the breadth of statement that characterises the book, that it comes as a refreshing change from the manipulation of mere details which makes up the content of some of our older handbooks of English archi-

ecture. It may be in conscious revolt that Mr. Prior treats so cavalierly the sacred theme of mouldings, of which in some circles there is quite a *cultus*. He wastes few words on their analysis, and some of the drawings which exhibit them, such as fig. 78, are the least enlightening in the volume. The gratitude of the reader who is let off his mouldings is further earned by the total absence from Mr. Prior's pages of any reference to the stock-in-trade of the architectural medicine-man, who comes along with his symbolism, his triangles and ratios, his guild-secrets and "freedom," his *magistri Commacini*, and the like. It would not be worth mentioning all this paraphernalia, with which the history of architecture has sometimes been encumbered, were it not that such mysticism exercises a fascination over some minds and receives at times undue countenance and encouragement. Our mediæval churches, according to the book before us, were fashioned on principles of art and of common sense, and were designed of such proportions as fitted the aims, the taste, and the means of the builder. It was reserved for the generations that came afterwards to force the actual dimensions on to the Procrustes-bed of the mystic triangle or scale.

The reader's satisfaction in the attractive-looking volume is enhanced by a full index, but it is a pity that a little more pains were not taken to eliminate from the text misprints and errors, which are more numerous than is indicated in the list of errata in the preface. That Karnak and the Ramissem are on p. 2 antedated by some four millenniums may be held not to matter, as the public is indifferent to a few thousand years more or less in Egyptian chronology. It is more important that the assignment of English localities to their respective counties is too often incorrect, as when Iver is put in Middlesex, Kelnscott in Gloucestershire, New Romney in Sussex, Sibton Abbey in Essex. We noticed four of these slips on a single page. These may not be matters of great moment, but we blame foreign writers for blundering in our titles and places,* and should ourselves set the example of accuracy. There are not a few *obiter dicta* in the volume to which exception might be taken, such as the statement that Irish round towers are *often* attached to churches (p. 47), that the aisling of naves and the central-towered cross-plan were specially monastic, and that the square western towers of Saxon churches go back to the ninth and tenth centuries and have *most often* no western entrance (pp. 50, 51). To say that "the sexpartite vault was a hybrid fathered on the dome rather than a natural offspring of groin intersection" (p. 96) is to ignore that form of it which appears at Ste. Trinité, Caen, and seems clearly to show the priority of the

quadripartite intersection. A protest should be made against the growing custom, favoured by Mr. Prior, of using the word "apse" for a square-ended presbytery. Unless this is an indirect way of defying the reproach that English art abandoned this effective traditional feature of Christian architecture, there is no reason for the misuse of language. *Apsis* (from *ἄπτεω*, I connect) is employed both in classical and early Christian writings in the sense of a rounded dome or semi-dome. This meaning the word has retained, and it only breeds confusion to try and make it imply something quite different. That Romanesque doors were "wooden mimeries of stone construction" is a puzzling statement (p. 274). Stone doors in Central Syria and bronze doors in the mediæval West imitate wooden ones, but the contrary relation we do not remember to have met with. The illustrations, mostly by Mr. Gerald Horsley, strike one as somewhat unequal. Many of them are delightfully clear and firm in touch, such as that of Wells North porch (p. 111) and Hexham transept (p. 187), Chester Refectory pulpit (p. 239), and some of the drawings of ornament between pp. 138 and 151. On the other hand there is rather a want of breadth about the Chapel of the Nine Altars, Durham (p. 195), while Lincoln south doorway of presbytery (p. 283) and the "Minstrel Gallery," Exeter (p. 419), are confused and unsatisfactory in effect, and Chichester Triforium (p. 135) is not nearly so good as Valentine's photograph.

In regard to his general attitude towards his subject the author may count upon a good deal of sympathy among his readers for his mediævalism. From his point of view, if the Oxford of 1200 had no glazed drain-pipes it was at any rate a place where "the student was in the midst of an impulse that was growing to greater nobleness and freer expression, and making every building, small or great, fair and beautiful, radiant with colour, alive with the vitality of a sculpture such as the world has rarely seen; when fabric and utensil alike had a fitness and grace that makes their fragments the treasures of a cabinet; when, in a word, there was an absence of any ugly thing, for the whole being of the nation was expressing itself in beauty" (p. 45) —

and we are well content to dwell with the author for a while in this somewhat idealised realm. As anti-restorer he goes a little far, perhaps, when he figures the unrestored churches of the early part of this century as buildings in which "fifty years ago" Gothic utterance "still spoke clear and true." We fear that the voice had then to come, somewhat muffled, through plaster ceilings and coats of whitewash, and from behind galleries and boardings manifold. No sane person would defend all that has been done in the last half-century in the name of restoration; but should we have been as well off now, on the whole, if the churches had been allowed to remain as they were or to fall, as many of them threatened to do, into ruins? Indiscriminating wrath against all that comes under the word "restoration" does more harm than good to the

* In M. Ruprich-Robert's *Architecture Normande* three successive plates are labelled *Eglise Abbatiale de Saint-Alban (Kent)*, *Eglise Abbatiale de Saint-Alban (Hertfordshire)*, and *Cathédrale de Saint-Alban (Kent)*.

cause which those who evince it have at heart. "Restoration" includes such processes as the removal of unsightly accretions, the renewal of structural parts which are giving way, the rebuilding—of course without the old-world glamour—of ruined fabrics that are actually needed for the use of modern congregations. Cases of this kind must be differently judged from the detestable practice of rejuvenating old work when there is no question involved of safety or accommodation. It may be necessary to rebuild the nave of Hexham and justifiable to open the screen, but the renewal, in a former restoration, of the balustrade of the noble stairway from the dormitory had no sort of justification whatsoever. The refurbishing up of the Chapter House at Canterbury is a recent case of tasteless modernisation, and the restoration, now threatened, of Iona Cathedral would be a still worse offence.

On the question of the actual artistic merit of English Gothic architecture, especially in comparison with that of France, Mr. Prior's work, not perhaps in form but in fact, is controversial. It is a forcible vindication of our native style against the depreciation of foreign writers, whose adverse criticisms were summed up and emphasised in the *Gothic Architecture* of Professor Moore, of Cambridge, Mass. We must frankly admit that, while sympathising with Mr. Prior in his patriotic enthusiasm, we hold his statement of the case in some important points one-sided and even paradoxical. He admits, it is true, the splendour of the French achievement (pp. 9f., 30f., &c.), but he seems inclined elsewhere in the book to take away in detail from the meed of praise to which he gives this generous expression. Professor Moore had worked to death the familiar theory of French Gothic construction as dominated by the vault, but Mr. Prior goes too far on the other side when he seems to treat the vault as something indifferent or even in the way, accepts wooden imitations of stone vaults without demur, and even remarks (p. 185) that the Augustinians of Hexham, "uncramped by the necessities of vaulting," "were able to exhibit the ambitions of Gothic frankly and completely, without the compression that mars our cathedral bay-design." It is curious to find the extravagantly spreading, we had almost said sprawling, flying buttresses of Lincoln Chapter House praised at the expense of the necessary supports of the high vaults of French churches.

"Very widely and finely do they" (the chapter houses) "plant the bases of their expression—those weathered and sloping buttresses which contrast with the scaffold-like erections of the contemporary French construction" (p. 321).

Again, consistency and logic in the relation of parts and details to structure may be made a fetish, but is none the less a principle of vital importance. In Mr. Prior's treatment of west fronts may be discerned a certain laxity of view on this matter. He is satisfied to regard the west front of a great church as a sort of screen that might

be made wide or narrow at will, instead of the necessary expression, first, of the structure of the building, and then of its function as a place of congregational assembly standing open for the multitude to enter. To praise the west front of Wells because "with perfect art the doors are subordinated to the scale of the statuary, and give it a prominence," sounds a note of defiance in the face of Mr. Ruskin's well-known criticism of the "pitiful little pigeon-holes." For decorative features to give the scale to essential parts of the fabric is a solecism in the tectonic art. It is true that, as Mr. Prior points out, there are at Wells, as in many of our English churches, important side entrances, which give occasion for the specially native feature of the extended porch; but the surrender of the main portal at the end of the building opposite the altar is a very serious one, and the resulting loss is not a thing wholly to ignore. The absence of unity in the interior effect of our long and subdivided buildings, that are sometimes like two churches in one, and the square east ends, which in one place at least (p. 40) are presented as positive improvements, are points in which English Gothic buildings are open to reasonable criticism. The reader of the work before us will be too apt to carry away the impression that the style united all possible excellences both of general design and of detail.

In the more distinctly historical part of his work Mr. Prior is successful in establishing for English Gothic the independent position which the best of recent foreign writers are ready to accord to it. Though we must still seek in France for the original inspiration of the Gothic movement, there is no question that the relation of English work to French is not one of filiation so much as one of parallel development. By emphasising Cistercian influence* the author is able to trace the evolution of English Gothic in the last half of the twelfth century without any more than a passing reference to the work of William of Sens at Canterbury. As Westminster in the thirteenth so is Canterbury in the twelfth century treated as a mere episode, a local accident as it were, not affecting the general course of English architectural history. For the plan of the English Gothic cathedral a source is found far back in our annals, and a considerable part of Mr. Prior's second chapter is occupied with an endeavour to introduce classification and a principle of development into the multitudinous varieties presented by actual structures from the seventh century to the thirteenth. There is no space to enter upon the archaeological questions suggested by this retrospect, but the distribution of early plans as typical of different religious bodies can hardly be made out with clearness till

* Mr. Prior even writes (p. 131) of "our first Gothic" as "a Cistercian art." There was a good deal, however, even in English early Gothic that cannot be explained from Cistercian sources.

we come to the distinct Cistercian peculiarities. Our own later architecture may have derived certain special features, such as large porches and square east ends, from earlier traditions, but the real secret of the peculiarity of the English plan was that it carried much further than was the case on the Continent the monastic tendency to emphasise and enlarge the presbytery. It was mainly through this that there was accomplished what Mr. Prior calls "the emancipation of the English church-plan from the general monastic traditions of Western Europe, and the Gothic creation of a new type for us" (p. 46).

The larger portion of the volume is occupied with an artistic analysis of this English Gothic scheme of building. There may be differences of opinion as to its historical genesis, and the author may, as we have indicated, deal with it in some of its broader æsthetic aspects in a too partial spirit, but most readers will cordially subscribe, on the other hand, to his admiration for English Gothic detail. Alike to the sculptural reserve and purity of early English and the rich diapering and niche-work of the fourteenth century Mr. Prior does full justice in phrases at once acute and appreciative. The passages in question may be commended to those critics from beyond the seas who would deny true artistic inspiration to our masons and carvers because they felt no ambition to turn their churches into what Mr. Prior calls, somewhat unkindly, "chain-works of articulated stone pegged to the ground by pinnacles."

The author has adopted in the main the three-fold division of the successive styles of English Gothic, though he points out (p. 300) the vagueness of the indication furnished by the popular term the "Decorated style." True to his philosophic aim he describes the three periods as expressing successively the ideals of the Priest, the Noble, and the Burgess. In the first case he is driven to an inadequate explanation through his reluctance to acknowledge the French inspiration of the whole spiritual movement of the twelfth century, of which Gothic was only one of many results. The connection, however, of the art of the fourteenth century with the age of chivalry is well made out (ch. viii. *ad init.*), and so too is that of the "perpendicular" epoch, when, after the Black Death of 1348, "socially and artistically England entered on a new life; the Middle Ages had sown their wild oats; the exuberant audacities of romantic youth were left behind." The "Decorated" epoch is fully dealt with in respect to its various achievements in structure and ornament in the eighth and ninth chapters, but the later phases of English Gothic to which the last chapter is devoted are not followed out into detail. The author acknowledges that "a book by itself is needed to do justice to the last chapter of our English Gothic," and this in the present connection he has not essayed to write. But if, as he says, "the attempt to individualise the local

characters of perpendicular is beyond the compass of these pages," for the earlier periods he has always in view his aim of "separating the different schools of English style," and defining "as far as possible their local characters." To give an account of this analysis of the characteristics, both æsthetic and local, of the work of the thirteenth and fourteenth centuries, contained in a volume that all will read, would be quite superfluous. Mr. Prior's treatment of the development of window tracery, especially in relation to the character of the glass filling; his brief analysis of the design of towers and spires; his notes on decorative art in canopies, tombs, and fittings, which, though necessary, are always fresh and suggestive, are features of the book which readers will commend, though they will miss from the last chapter a notice of the later woodwork in screens and roofs, which seems needed to complete the review of the characteristics of English Gothic. The author seems, indeed, less at home in East Anglia, where these things flourish, than in other parts of the country.

The volume before us will necessarily occupy the position it deserves to hold as the text-book for students of our English styles, and these will find his statements if not infallible yet always a stimulus to further study and comparison. When the subject is parted with in the last chapter the extent of the field which still waits for exploration comes clearly into view, and one of the best purposes the book can serve will be that of a starting point for further investigation of the infinitely varied artistic beauties of English mediæval art, especially in our country churches.

"The varying applications of this art in the solid homely sense of English life can be read in the make of our parish churches; and so we ought to study them, country-side by country-side, noting their fancies and their shifts, their love and their simplicity, and praising the fathers that begat us" (p. 447).

That foreign critics and historians take in general an adverse view of English Gothic Architecture is partly due to the fact that they study it in the greater monuments, in which a comparison with parallel work in central France is not always to our advantage. The artistic spirit which animates our native Gothic expresses itself most perfectly in smaller works, such as the Chapel of the Nine Altars at Durham, or the exquisite north porch at Wells, in Lady-chapels and chapter-houses, and most especially in the parish churches. Fully to assimilate the charm of English Gothic it should be studied in these smaller, often quite unpretending structures, and they should not be visited merely, but, so to say, *lived in* until the charm enters the mind and dwells there. The opening up of this storehouse of beauty to the intelligent student is one of the great aims of Mr. Prior's book, and in the central chapters of it he has well succeeded.

Edinburgh.

G. BALDWIN BROWN.

EMBROIDERY.

Art in Needle Work: a Boo' about Embroidery. By Lewis F. Day and Mary Buckle. "Textbooks of Ornamental Design" Series. 8s. Lond. 1900. Price 5s. net. [B. T. Batsford, 94, High Holborn, W.C.]

Art in Needle Work, Mr. Lewis F. Day's latest work, is a useful manual on embroidery, which will provide pleasant and profitable reading for those interested in the subject. The object of the book is to show what decorative stitching is, how it is carried out, and what it can achieve. To attain this object almost every known stitch has been classified with clearness and simplicity; concise descriptions are given as to the way in which each is worked, and advice is offered as to which is most suitable to produce a desired effect. The book is profusely and admirably illustrated. The examples are drawn from the needlework of many countries, and are chosen for the artistic interest they possess as well as illustrating some point of workmanship. All students and workers of this handicraft, which "at its best is an art," will be grateful to Mr. Day for placing at their disposal the result of his studies. E. M. CHARLES.

LEGAL.

Architect taking out Quantities: Fees.

DOLLAR V. HIGGS.*

This was an action brought by the plaintiff, an architect and quantity surveyor, to recover from the defendants, Messrs. H. & H. T. Higgs, builders and contractors, the sum of £262 10s. The case was heard by the Lord Chief Justice and a special jury on the 1st, 2nd, and 3rd May. The plaintiff's case was that in August, September, and October, 1897, the defendants were employed in the erection of buildings at Tottenham for Messrs. Pickford & Co. The plaintiff prepared plans and took out bills and schedules of prices and measured up the work in connection with the said buildings, and alleged that his fees and charges as quantity surveyor amounted to £262 10s. His case was that, in October 1899, Messrs. Pickford & Co. paid to Messrs. Higgs on behalf of the plaintiff the sum of £262 10s., and that the defendants received that sum as agents for the plaintiff. He alternatively claimed the money for work done and services rendered as quantity surveyor. The defendants denied that the plaintiff took out the bills or schedules of prices, or measured up any of the work in connection with the buildings, or that his fees and charges amounted to any sum. They denied that they had ever agreed to pay the plaintiff his charges, and that Messrs. Pickford & Co. ever paid them any sum as agents for the plaintiff. They said that Messrs. Pickford & Co. paid them £262 3s. 8d. for and on behalf of Mr. Wardle as surveyor's fees for measuring and making up accounts in respect of the buildings, and alleged that they had paid Mr. Wardle this sum. The defendants further denied that the plaintiff did any work or rendered any service as quantity surveyor in or about the erection of the buildings. It appeared that the plaintiff's case was that he had employed Wardle to do the work in question at a less percentage than he was to receive from Messrs. Pickford & Co., and which was by arrangement $1\frac{1}{2}$ per cent. In other words, the plaintiff alleged that Wardle did the work as his assistant.

* This and the following case are compiled from the reports in *The Builder* of 12th May.

After hearing evidence, his Lordship left the following questions to the jury: (1) In the circumstances of the case, were the defendants justified in regarding Wardle to be an independent quantity surveyor and paying him? (2) Was there any evidence that the plaintiff did anything in relation to the quantities, except in his character of architect? His Lordship said he hoped that the plaintiff would think it right to consult the highest authority in his profession as to whether that authority thought it consistent with the highest standard of professional honour to act upon such an arrangement as the plaintiff said he had done in the course of the case. His Lordship thought the arrangement spoken of was objectionable, as it was desirable that the quantity surveyor should be an independent person and quite independent of the architect. The architect ought to have no interest in the work of the quantity surveyor at all. He told the jury that if the plaintiff had led the defendants to believe that Wardle was an independent quantity surveyor he could not recover.

In the result the jury could not agree on a verdict, and were accordingly discharged.

TORROMÉ V. SCOTT.

This case came before the Lord Chief Justice and a special jury in the Queen's Bench Division on the 3rd May.

The plaintiff, the owner of a house and premises called Hillwood, West Hill, Sydenham, sued the defendant, an architect and surveyor employed by him, for negligence. There was also a further claim in respect of certain moneys received by the architect from the contractor in alleged breach of the agreement entered into between the employer and the architect, and further without the knowledge and consent of the employer. The defendant denied the alleged negligence, and said that the agreement between himself and the plaintiff was that he (defendant) should have the usual charge of 5 per cent. for preparing the plans and specification of the work to be done, and also for supervising its carrying out. He further said that the plaintiff did not demand, nor did he (defendant) agree that the commission of 5 per cent. should be taken in discharge of all fees, charges, and expenses whatever in relation to the said work. The defendant also counter-claimed against the plaintiff for fees he alleged to be due to him for services rendered.

Mr. A. T. Lawrance, Q.C., and Mr. Giles appeared for the plaintiff; and Mr. Scott Fox, Q.C., and Mr. Sturgess for the defendant.

From the opening statement of the plaintiff's counsel (Mr. Giles) it appeared that the agreement between the parties was entered into in March, 1896, in respect of the house in question, to which the plaintiff desired certain alterations and additions to be made. In the first place the agreement with the defendant was for a sum to cover the supervision of the work and to carry out the alterations for which plans had been prepared by a builder for a sum of 3 per cent. on the cost. Subsequently, that arrangement was altered, because the defendant suggested that these plans were not sufficient for the purpose, and that he should prepare better plans. With regard to that it was further agreed between the plaintiff and the defendant that the former should prepare the plans and specifications, and obtain tenders in respect of the work for a fee of 5 per cent. on the cost. The plaintiff's contention was that he was to pay this 5 per cent. and that there would be nothing more to pay. The plans, &c., were finished in June 1896, and certain tenders were received which the employer thought too high. Negotiations then took place in order to see if some one of the contractors would not agree to do the work at a lower figure. Ultimately it was arranged that a contractor, Mr. James Carmichael, should do the work required for the sum of £3,200. That contract was signed on 29th October 1896. The contract provided that the work should be completed by 31st May 1897. There was also a proviso

that the work should be done in a workmanlike manner and with the best materials, and that alterations and additions might be made during the progress of the work on the order of the architect. It seemed that the ordinary course with regard to these orders was not followed. Instead of entering the orders in an order-book, the architect gave the orders by letter. It was impossible, counsel contended, at the end of important work like this to ascertain what was extra work and what was contract work, after a considerable lapse of time, when there was no data to show the amount of extra work the architect had ordered. The extras in the present case amounted to £1,060. Plaintiff's counsel also stated that the summary attached to the bills of quantities contained a provision that the contractor tendering should add the surveyor's charge of 2½ per cent. on the estimate, which was to be paid out of the first instalment. The plaintiff's complaint on that was that this was in breach of the arrangement made by the defendant that he would do the work at 5 per cent. In addition to that the plaintiff's case was that he never knew that this amount was to be paid to the architect, that he was never consulted upon it, and his consent was never given. The plaintiff never knew until later, by a mere accident, that the defendant was receiving that sum of money from the contractor, and it was alleged that there was evidence of an intention on the part of the architect to keep this fact back, or secret, from the plaintiff. The evidence was that when the plaintiff asked for a copy of the bill of quantities the copy sent to him by the defendant terminated at page 108, and did not contain the paragraph complained of. Plaintiff's counsel submitted that although there was ample authority on the part of the architect to employ a quantity surveyor, it was contrary to the rules of the profession as laid down by the Institute that the architect should do the work himself without the consent of the employer, and receive any payment from the contractor.

His Lordship: I understand it was not alleged by the architect that an independent quantity surveyor was employed.

Mr. Scott Fox: By a letter of June 22 to the plaintiff he said he was going to do it himself. He said, "I will take out the quantities." Throughout the correspondence there was no suggestion that he would employ anybody else.

Mr. Giles replied that at this time the plaintiff knew nothing of the payments passing between the contractor and the architect. It was only in consequence of something which the plaintiff heard later on that the plaintiff taxed the architect with it, and he admitted that it was in respect of getting out the quantities that he was to receive payment. In June, 1897, some further work was undertaken by the architect for the plaintiff, and this was the erection of certain stables to Hillwood. Tenders were obtained for the work, and quantities were got out. These quantities were submitted to the plaintiff, who struck out this claim of 2½ per cent. when the quantities came before him. The plaintiff said that the contract with the defendant was the same as it was for Hillwood—viz., 5 per cent. for all the work, and that he would not allow this 2½ per cent. for taking out the quantities. The defendant said, however, he was entitled to it. It was submitted that the defendant was not entitled to anything for measuring up the extras, &c., as it was all included in the 5 per cent. for the total cost of the work. The sum claimed for that item, viz., £72 15s., had not been paid by the plaintiff, but it was included in the certificate of the architect granted on 31st August 1898, and claimed in the action which the contractor was bringing against the plaintiff. There was a similar claim made by the defendant in respect to the stable contract, and he granted his certificate also with respect to those extras.

His Lordship: My present impression is that you have to show, to begin with, a special contract that 5 per cent. was to cover the charges for taking out the quantities. It

may be that this gentleman was wrong in undertaking that work himself, and I think he was. I think he ought to have had some independent person to do that work and the measuring up. If he had done so, however, the plaintiff would have had to pay for it. You have to show that there was an express contract by the defendant with the plaintiff that the 5 per cent. was to cover everything. His Lordship added that it appeared to him that the matter could be best dealt with by an arbitrator.

Mr. Giles said that he thought the question of whether there was a special contract or not was one which ought to go to a jury.

Mr. Lawrance said that the questions to be decided were whether there had been impropriety on the part of the defendant with reference to those payments, and whether he had been guilty of negligence in his duty as architect. Those questions ought to be tried together. The question of negligence, he submitted, was one which ought to go to some scientific person to say whether there had been impropriety or negligence on the part of the defendant.

Mr. Scott Fox, for the defendant, in agreeing that the case should be referred, said it must be distinctly understood that the defendant did not wish to have the case withdrawn from public investigation. He (the learned counsel) felt that it would be impossible to try the negligence part of the case before such a tribunal as the present.

After some further discussion it was arranged that the case should be referred to the President of the Royal Institute of British Architects, with power for that gentleman to name the architect to adjudicate on the matter if he (the President) could not take it.

The parties, on the recommendation of the Lord Chief Justice, decided to make the President the absolute arbitrator, whose decision should be final, he being also empowered to decide what should be done with regard to the costs of the trial and of the arbitration.

MINUTES. XIV.

At the Fourteenth General Meeting (Ordinary) of the Session, held Monday, 21st May 1900, at 8 p.m., Mr. Edw. A. Gruning, *Vice-President*, in the Chair, with 21 Fellows (including 10 members of the Council), 20 Associates, 2 Hon. Associates, and several visitors, the Minutes of the Meeting held 7th May 1900 [*ante*, p. 341] were taken as read and signed as correct.

The following Associates attending for the first time since their election were formally admitted and signed the Register, viz., Bessie Ada Charles, Ethel Mary Charles, David McLeod Craik, Alfred Herbert Foster, John Hunt, and Thomas Tyrwhitt.

The following applicants, found by the Council to be eligible and qualified according to the Charter and By-laws, and admitted to candidature, were recommended for election, namely:—As FELLOWS, Ibrahim Shaik Dauid Ahmadi [*A.* 1888], L.C.E. (Bombay); John Bain [*A.* 1892], Newport, Mon.; Sydney Francis Bartleet; Henry Budgen [*A.* 1892], Cardiff; Alfred Arthur Cox [*A.* 1885], *Grissell Medalist* 1886, *Godwin Bursar* 1890, Montreal; Thomas Dinwiddy; Ernest Flint [*A.* 1880]; Frank Loughborough Pearson; Nathan Glossop Pennington. As HON. ASSOCIATES, George James Frampton, A.R.A.; Frank Newton Jackson.

A Paper on THE WORK OF PROFESSOR COCKERELL, R.A., by Mr. J. M. Brydon [*F.*], having been read by the author, and illustrated by drawings and photographs specially lent for the occasion, a discussion ensued, and a vote of thanks was passed to Mr. Brydon by acclamation.

The proceedings then closed, and the Meeting separated at 10.15 p.m.

